

A REVISION
OF
„CRUSTACEA ISOPODA TERRESTRIA“

WITH ADDITIONS AND ILLUSTRATIONS

BY

G. BUDDE-LUND.

2. SPHERILLONINÆ. 3. ARMADILLO.

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2. SPHERILLONINÆ.

My researches in the terrestrial Isopods of late years, during which time I have had occasion to examine a large quantity of forms, so that the number of the species at present known can be estimated to near one thousand, do but confirm my arrangement in having only 4 well distinguished families*). The 3 families, *Ligiidæ*, *Tylididæ*, *Sypastidæ*, between which no transition form is found, are nearest allied with the maritime Isopods, chiefly with *Idothea***).

I can not agree with Mr. Sars***) who divides the *Ligiidæ* in two families, *Ligiidæ* and *Trichoniscidæ*: the characters with which he distinguishes the *Trichoniscidæ* are not satisfactory, the genus *Titanethes*, and other genera, connect.

The characters given by me for the 3 families are at this time intactable; only with *Sypastidæ* the following character must be altered: »Antennæ interiores desunt« to »Antennulæ 2-articulatæ, rudimentariæ, occultæ«, after that Mr. Hilgendorf****) has demonstrated their pre-

*) G. Budde-Lund: Crustacea Isopoda Terrestria. Hauniæ 1885.

***) If Mr. G. O. Sars is right in his systematic arrangement in his excellent work „An account of the Crustacea of Norway“. Bergen 1859. II, p. 3 it will be probable that the *Tylididæ* and *Sypastidæ* must be placed as terrestrial forms of „*Valvifera*“.

****) G. O. Sars, l. c. p. 159.

*****) F. Hilgendorf: Die inneren Fühler der Oniscidengattung *Sypastus*. (Sitz. Ber. naturf. Fr. 1891, p. 181).

sence, being concealed in a fold of the epistoma. Also for the fourth family, *Oniscidae*, I am obliged to propose a correction, »Mala interior maxillæ prioris parvis penicillis duobus, æqualibus« must be altered to »Mala . . . penicillis duobus, subæqualibus aut rarissime penicillis pluribus, sæpe inæqualibus«, since that Mr. Dollfus had shown*) this relation in some species of his genus *Mesarmadillo*, and I**) myself had illustrated it in a group, *Eubelineæ*, belonging to the family of *Oniscidae*.

For this fourth family, *Oniscidae*, which contains the largest number of the known forms, the characters are given in my Crust. Isop. p. 13. It will, however, in the meantime, be more convenient to divide this family in further subfamilies.

It is necessary now to undertake such a revision, the numerous publications of new species from the different localities of the globe having brought no better understanding of this group of Crustacea; furthermore it is clear, that as yet only a small part of the species living in our globe are at present known.

The published descriptions without exception, the best among them as well as those without value, and these last are not few, introduce but new forms in the old frames, and this arrangement is often but owing to external likeness, based on careless examinations. But one thing is reached, that it has been clear, that a new classification is necessary, because introduction of species by the hundred to a genus is worthless in itself even for the registration in a museum.

The frames of these subfamilies will include forms after new lines very different from the assertions earlier made by me, and they will no doubt for several be surprising. My old classification in *Armadilloidea* and *Oniscoidea*, which I dubiously had set up and which others have accepted,

*) A. Dollfus: Crust. Isop. Ter. in Voy. Alluaud. d. Assinie. (Ann. soc. ent. Fr. 1892. p. 385).

**) G. Budde-Lund: A Revision of Crust. Is. Terr. Kjøbenhavn 1899.

while Sars*), and after him (Chilton**) have enlarged to two families, is without value. The family *Scyphacine* Dana, *Scyphacidae* Chilton, is with some restrictions a good subfamily.

I give below a conspectus after my present view, for the connexions between the forms of *Oniscidae*. I shall also give the proof for the proceeding of one of the subfamilies, *Spherilloninae*; I have given it for an other subfamily, *Eubelinae*, and I hope later to be able to give the relations for the other subfamilies.

My researches in these other subfamilies are also on the whole ready for publication, they are the result of nearly twenty years work with these Crustacea. After the finishing of my work, *Crust. Isop. Terr.* 1885, I had not thought to come again to treatment of these Crustacea, as I was prepared to work on other matters. Meanwhile I received continually from several museums and private collectors larger or smaller collections for determination, and because these often offered new and peculiar forms, which gave enlightening of importance for the morphology of these Crustacea and could be of use for corrections of mistakes of mine and others, I resumed the work, and I have spent the most of the otium, I could save from my public and private affairs, with it.

A studium through so many years, very often during time which has been passed in different localities, during holidays in town or country, often in foreign museums, has retarded and has raised many difficulties for a coherent research: that has also had influence on my illustrations. When making examinations with almost all forms, and more especially with those of which I have seen only single examples or where the chances of my seeing them again were remote. I have made drawings of habitus and details to a number

*) l. c. v. II. p. 187.

**) Ch. Chilton: *Terr. Is. New-Zealand.* (Tr. Linn. soc. Lond. 2 s. VIII. 99).

of some thousands, and because many of them are drawn in part freely under the magnifyingglass, in part with different microscopes and different magnifyings under variable circumstances of light, through a series of years, uniformity in the manner of presentation has been unable to be maintained.

I am indebted to all the gentlemen, who have placed materials at my disposition, and I may then chiefly record my thanks to the directors for the museums: in Kjøbenhavn, Inspector, Dr. Fr. Meinert, in Stockholm, Prof. Hjalmar Theel, in Berlin, Prof. Möbius and Dr. J. Thiele, in London, Prof. F. Jeffrey Bell, in Genova, Prof. R. Gestro, to Mr. Ad. Dollfus at Paris, Dr. Calman, at Dundee, Dr. Otto Steinhaus, at Hamburg, Dr. Bürger, at Göttingen.

Conspectus generum familiæ Oniscidarum.

Subfamilia 1. *Eubclinae*.

Genera: *Eubelum* B.-L. — *Mesarmadillo* Dollf. ex parte. — *Periscyphops* Hilgend. — *Hiallum* B.-L. — *Ethelum* B.-L.

Subfamilia 2. *Spherilloninae*.

Genera: *Spherillo* Dana ex parte. — *Sunnira* nov. genus. — *Säidjahus* nov. genus (*Mesarmadillo orientalis* Dollf., *M. elegans* Dollf., *M. guttatus* Dollf.). — *Scleropactes* B.-L. ex parte (*S. concinnus* B.-L., *S. incicus* B.-L.). — *Suarezia* nov. genus (*Mesarmadillo heterodoxus* Dollf.). — *Arhina* nov. genus. — *Pseudophiloscia* nov. genus (*Philoscia pubescens* Chilton ex parte). — *Ambounia* Dollf.?

Subfamilia 3. *Rhyscotinae*.

Genera: *Rhyscotus* B.-L.

Subfamilia 4. *Armadilloniscinae*.

Genera: *Armadilloniscus* Uljan. (*Actoniscus* Harger). — *Scyphoniscus* Chilton.

Subfamilia 5. *Scyphacinæ*.

Genera: *Scyphax* Dana (*Philoscia violacea* Filhol). — *Actæcia* Dana (*Cylloma oculatum* B.-L.).

Subfamilia 6. *Detoninæ*.

Genera: *Deto* Guérin (*Actæcia Aucklandiæ* Thoms., *Philougria marina* Chilton, *Oniscus Novæ-Zelandiæ* Filhol?)

Subfamilia 7. *Oniscinæ*.Tribus 1. *Armadilloidea*.

Genera: *Armadillo* Dum. — *Synarmadillo* Dollf. (*Periscyphis* spec. complures). — *Periscyphis* Gerst. — *Toradjia* Dollf. — *Sphæroniscus* Gerst. (*Scleropactes senex* B.-L., *Sclerop. peruvianus* B.-L.). — *Adinda* nov. genus (*Mesarmadillo Weberi* Dollf.). — *Pseudarmadillo* Sauss. — *Haplarmadillo* Dollf.?

Tribus 2. *Oniscoidea*.

Genera: *Armadillidium* Br. (*Eluma* B.-L.). *Porcellio* Latr. (*Cylisticus* Schnitz., *Hemilepistus* B.-L., *Metoponorthus* B.-L., *Leptotrichus* B.-L. ex parte, *Bathytropa* B.-L., *Lucasius* Kinah., *Lyprobius* B.-L. ex parte, *Iglesius* Costa?, *Ouracherus* Kinah.?). — *Oniscus* L.

Tribus 3. *Alloniscoidea*.

Genera: *Alloniscus* Dana. — *Philoscia* Latr.* — *Niambia* nov. genus (*Leptotrichus squamatus* B.-L., *L. truncatus* B.-L., *Metoponorthus capensis* Dollf.). — *Lyprobius* B.-L. ex parte. — *Pseudoniscus* Costa. — *Platyarthrus* Br. — *Acanthoniscus* Kinah.?

Subfamilia 8. *Stenoniscinæ*.

Genera: *Stenoniscus* Dollf.

In »Crustacea Isopoda Terrestria« I have in the year 1885 described 36 species of the genus *Armadillo*, also I have there enumerated several species unknown to me, taken after the descriptions given by other authors. In the following

*) The genus *Philoscia* is an unnatural genus, some species having relations to *Oniscus* some to *Sphæroniscus*, as I hope it shall be successful for me afterwards to demonstrate.

years has a heap of species been introduced in the zoological catalogues, so that up to this day I have cast the number up to 110 species, and furthermore I have descriptions and drawings of more than 40 species after my opinion undescribed.

I have again and again examined the species of this genus in all details for finding the true relations between these numerous species. The difficulties by such examination through long time are particularly increased for want of material. Several forms I had examined years ago and never seen again, several were only in single specimens in the museums, and which I dared not sacrifice.

The result I have reached and which I shall give in the following, will surely be a surprise and perhaps, at first view, be doubtful for the naturalists, who have been occupied with the study of these Crustacea. This genus particularly will be subjected to a complete alteration; I have divided it in two parts, *Armadillo* and *Spherillo*, and these two parts I have placed in two different sections or subfamilies of the family of *Oniscidæ*.

The characters gathered from the truncal segments, which I have used formerly for the grouping of the species, may be good enough as characters of lower value, it is certain that the more or less ability to conglobation has fixed marks on the different truncal-segments*) and particularly on the extremities of the body, on the front and on the telsum and on their appendages; but the conglobation, so often very much similar in different species, will however by careful examination be proved to have its origin from entirely different types.

*) When Dollfus marks with the name „coxopodit“ the duplicature, fold, split or groove in the first and sometimes in other truncal-segments, it is a term, which may be satisfactorily descriptive, but morphologically seen it is wrong; this structure often has nothing to do with the legs, it is only a physiological formation, being very different from the coxopodit in the *Ligie*, *Idothee* and other maritime Isopods.

The only exclusive character I have been able to find for bringing proofs for the division of the genus *Armadillo* is owing to studies with the mouth-parts, these shall be described below, and these terms will also be certainly essential. Among the other characters to which I shall call attention are principally two, which until now have been disregarded. The dorsal plates of the segments are divided in a foremost and a hindermost part, separated by a suture. The foremost part, I call pronotum. During the conglobation the pronotum and a greater or smaller portion of the hindermost part slides under the underside of the preceding segment, and the size of the pronotum is very different; usually it is larger, when the isopod is less able to conglobation. One shall find application for this character under a great many circumstances, unfortunately a careful examination demands the dissection of the specimen. Not only the form of the connexion between the individual segments of the body, but also between the first segment of the truncus and the head, a connexion usually very firm, has fixed marks as well in the articular surfaces as in the position of the eyes and of the antennæ, and these marks are of importance. Also here is unfortunately a decapitatio necessary.

The second character I have chiefly used for classification is the appearance of the tracheæ in the exterior branch of the pleopodes. With reference to this character the female alone is taken in consideration, the reason for which will be shown in the following remarks. The exterior branch of the pleopodes in all Isopods appears, as is well known, as a deckplate for the innerbranch, which is developed into generative appendix or gills. All the species of *Spherillo* and *Armadillo* have as far as I know tracheæ in the exterior branch of all the 5 pairs of pleopodes. This deckplate can appear in very different form and consistence and can give good characters, sexual, as well as special and general. The relation I have used for classification, because it seems to me to be essential, is the existence or complet

want of deckplate, in the female, of the exterior branch of the first pair of pleopodes, being reduced to a little oval trachea. In the male the deckplate of this pair of legs is scarcely completely wanting anywhere, but is very variable in the different species. When I have not been able to give notice with regard to this relation, it is because that whilst I have had female specimens of almost all the species I have examined, I have but of the fewest of the species had male specimens, it seems they are obviously in a very smaller number.

My systematic division is corroborated by the geographical distribution of the forms. The species of *Armadillo* are almost exclusively habitants of Europe, Asia Minor, Africa, America; the species of the genus *Spherillo* and of the other allied genera are living in Australia and spread to all the numberless isles of the Pacific Ocean, also in the Southeast Asia and the East India Archipelago; these last countries and the eastern coast of Madagascar are the meetingplace for forms of both genera. With regard to the terrestrial Isopods the largest part of Europe and North Africa is well worked out, with the greater portion of the other continents the researches are sparing and wide spread. From the interior of Africa, the largest part of South Asia and New Holland are but very few species brought to the light, and just from these last parts of the earth should species, belonging to the group here treated, be expected. The dispersion of the species of *Spherilloninae* from Japan towards South over the Philippine Islands, the Sunda Islands, New Guinea, New Holland to Van Diemensland and from here towards East over New Zealand and all the Pacific Islands to points in the west-coast of South-America can point to the outlines of a former continent: the east-coast of Madagascar, however, together with the little Islands Seychelle and Mauritius and also the Malayan Peninsula, although lying out of this boundary must certainly belong to it. One point only seems a little without connexion, Siam and Mt. Karen in Burma, this however could give rea-

son for hypothesis, which geological researches perhaps will clear up in the future.

Spherilloninæ.

Mandibularum lacinia interior mobilis appendice prima latiore, molari.

Maxillæ prioris paris*) endopoditum penicillis ambobus brevibus, ovalibus, crassioribus.

Oculi plerumque ipsum marginem lateralem capitis occupantes.

Conspectus generum.

- a. Capitis partes pleurales linea marginali verticali utrinque decurrente manifesto discretæ.
 Flagellum antennarum 3-articulatum.
 Trunci segmentum 1. epimeris integris.
 Uropodes producti, telsum superantes. Exopoditum longum, apicale, scapo multis partibus longius.
 - b. Pleopodum rami operculares tracheis nullis.
1. *Pseudophiloscia*. 3 species.
 - bb. Pleopodum rami operculares tracheis instructi.
2. *Arhina*. 1 species.
- aa. Capitis partes pleurales concretæ; linea marginalis verticalis utrinque ad oculos sæpe ad epistoma producta.
 - b. Flagellum antennarum 3-articulatum.
 - c. Trunci segmentum 1. post fissum.
3. *Suarezia*. 1 species.
 - cc. Trunci segmentum 1. integrum.

*) I have before, obsequious to Dr. H. J. Hansen, called the first pair of Maxillæ »Maxillulæ« in accordance to the Antennulæ; now I dare not use this term for fear of bringing confusion, if it should appear, that the Antennulæ are really the second pair of Antennæ. what at present seems to me to be probable, and also the Antennulæ in the Crustacea are homologous with the Antennæ in the other Arthropoda.

4. *Scleropactes*. 2 species.
 bb. Flagellum antennarum 2-articulatum*
 c. Telsum post angustatum, subtrigonum.
 Uropodes mediocres, telsum paulum superantes.
 d. Trunci segmentum 1. margine laterali duplicatura
 crassiore.
5. *Saïljahus*. 4 species.
 dd. Trunci segmentum 1. margine laterali tenui.
6. *Sunniva*. 1 species.
 (7. *Ambounia*. 1 species).
 cc. Telsum post tetragonum.
 Uropodes breves, telsum non superantes.
8. *Spherillo*. 65 species.

Pseudophiloscia.

Flagellum antennarum 3-articulatum.

Pleuræ capitis discretæ, linea verticalis utrinque post oculos decurrens.

Trunci segmentum primum post integrum.

Pleopodium rami exteriores solum operculares, nullis tracheis instructi.

Telsum breve, subtriangulum, epimera segmenti pænultimi superans.

Uropodes longi, producti: Exopoditum longum, hastatum, scapi apici insertum, scapo fere triplo longius; endopoditum longum, compressum, exopodito nonnihil brevius.

• Corpus convexiusculum, non in globum contractile.

Trunci segmenta pronotum satis magnum, fere tertiam partem dorsi segmenti æquans, minus manifesto discretum habent.

1. Pseudophiloscia gracilis.

Philoscia gracilis B.-L. Crust. Is. Terr. 220.

Patria: Upolu. (Mus. Hamburg).

*) Regarding „*Sunniva*“ I am not sure; the two specimens I have seen were both wanting the antennæ.

2. *Pseudophiloscia fragilis*.

(Tab. VI fig. 5-6).

Philoscia pubescens Chilton, Tr. Lin. soc. Lond. 1901. 136. ex parte.

Elongate ovalis, convexiuscula: superfices lævis, nitida, punctis sparsis impressis, non pubescens.

Oculi mediocres, paulum prominentes; ocelli dense congregati subconfluentes, numero c. 24.

Frons ab epistomate vix discreta; epistoma per medium linea transversa, elevata, subrecta; foramina antennaria magna. Clypeus fornicatus; labrum magnum, transverse bipartitum.

Truncus: Segmenta omnia epimeris minoribus, marginatis; margo posterior segmenti 1.-2.-3. curvatus, angulis externis rotundatis, segmenti 4. subrectus, angulis subrectis, segmenti 5.-6.-7. in medio incurvus, angulis posticis acutis.

Cauda: Segmenta omnia longiora, segmentum 1. sequentibus fere longius; epimera segmenti 1.-2. minima sed conspicua, epimera segmenti 3.-4.-5. parva, acutiora, leviter adpressa. Telsum breviter triangulum, fere triplo latius quam longius.

Color lividus ad latera fuscomaculatus.

Long. 11 m. m. Lat. 3,5 m. m.

Patria: New-Zealand, at Howick. (Chilton in Mus. Dundee).

Remarks. I have seen only one specimen, belonging to the Museum at Dundee presented by Prof. Chilton, and kindly sent me by Dr. Calman. Prof. Chilton has also kindly sent me two specimens of his *Philoscia pubescens*, which seems to be very akin to *Phil. mina* B.-L., but the bad and defective condition does not permit me to decide it with certainty. I suppose that the specimens collected at Howick, Auckland and Takapuna are belonging to *Pseudoph. fragilis*, the specimens from Kenepuru, Marlborough are *Philosc. pubescens*.

3. *Pseudophiloscia inflexa*.

(Tab. VI fig. 1-4).

Elongata, angusta, convexiuscula.

Oculi mediocres; ocelli minimi, dense subconfluentes congregati, numero e. 18.

Antennæ dimidium corpus longitudine æquant, graciles, hirsutæ; scapi articuli ad apicem versus gradatim longiores; flagellum scapi articulo 5. paulo longius, articulus 1. flagelli articulis duobus sequentibus, subæque longis subæqualis, articulus 3. seta apicali longiore.

Frons ab epistomate nisi in lateribus linea marginali non discreta; epistoma per medium linea transversa, elevata, subrecta, vel in medio leviter procurva. Foramina antennarum magna, tubercula antennaria nulla fere. Clypeus subhorizontalis vel leviter fornicatus, labro magno.

Truncus: Segmenta omnia epimeris parvis, tenuibus, integris; margo posterior segmenti 1.-2.-3. curvatus, segmenti 4. utrinque levissime incurvus, segmenti 5.-6.-7. medio leviter incurvus. Linea marginalis anterior segmenti 1, collaris, integra ad angulos anticos segmenti ducta et cum linea marginali, laterali conjuncta.

Cauda: Segmenta omnia subæqualia, longiora; epimera segmenti 1.-2. parva sed conspicua, segmenti 3.-4.-5. parva. Telson breviter triangulum, duplo vel plus latius quam longius.

Long. 9,5 m. m. Lat. 3 m. m.

Patria: Chile, at Corral. (Mr. Plate. $10/94$, in Mus. Berlin).

Arhina.

Flagellum antennarum 3-articulatum.

Pleuræ capitis linea verticali utrinque decurrente discretæ.

Trunci segmentum primum post integrum.

Pleopodum rami operculares omnium parium tracheis parvis instructi.

Telson breve triangulum, epimera segmenti pænultimi paululum superans.

Uropodes longi, producti: Exopoditum longum. sub-

hastatum, apici scapi insertum, scapo multo, plus duplo longius; endopoditum longum, scapo multo longius.

Corpus leviter convexum, ægre contractile.

Oculi congregati, ocelli numerosi.

Antennæ mediocres, corpus dimidium subæquantes.

Antennularum articulus 3. longus.

Trunci segmenta pronotum satis magnum, tertiam partem dorsi segmenti æquans, et nullum processum lateralem habent.

Arhina porcellioides.

(Tab. VI fig. 7-17).

Subovalis, convexiuscula, dense et minute granulata.

Oculi majores; ocelli dense congregati, numero c. 20.

Antennæ dimidio corpore vix breviores; scapi articuli 1. et 2. breves, subglobosi, articulus 3. 2do vix longior et multo angustior, articulus 4. paulo longior quam 3., articulus 5. paululo brevior quam articuli 3. et 4. conjuncti; flagellum articulo 5. scapi longitudine subæquale, articuli inter se subæquales vel articulus 1. duobus sequentibus brevior.

Frons ante lineam obsoleta ab epistomate discreta, in lateribus in tuberculositates producta, post lineam marginalem sulco leviori, transverso impressa. Linea marginalis verticalis utrinque ad oculos producta, deinde in pleuras capitis decurrens.

Epistoma angustius, convexiusculum, infra leviter transverse tumidum. Foramina antennarum magna, approximata; tubercula antennaria nulla. Clypeus fornicatus, lobis lateralibus nullis.

Truncus: Segmenta omnia epimeris tenuibus, integris; margo posterior segmenti 1. late curvatus, segmenti 2.-3.-4. leviter curvatus, subtransversus, utrinque vix conspicue incurvus; margo posterior segmenti 5.-6. leviter 7. magis in medio incurvus; anguli posteriores segmenti 1.-2.-3. late ro-

tundate obtusi, segmenti 4. subrecti, segmenti 5.-6. et maxime 7. acuti.

Cauda: Segmenta 1.-2. mediocria, segmenta 3.-4.-5. epimeris mediocribus; epimera segmenti 5. lata, angulo postico paulum extra verso valde divergentia.

Telson breve triangulum, lateribus incurvis, epimera segmenti 5. paululum superans.

Uropodes: Scapus oblique tetragonus, paulo latior quam longior, latere exteriore post excavato. Exopoditum longum, subhastatum; endopoditum longum, telsum satis superans.

Subunicolor, grisea, in trunci segmentis utrinque macula rotunda pallidiore.

Long. 7 m. m. Lat. 4 m. m.

Patria incerta, forsitan cosmopolita.

Remarks. I have several years ago taken two specimens in a warehouse at Kjøbenhavn, perhaps imported from East-India; also I have seen one specimen taken by Dr. L. Reh in the botanical garden at Hamburg, where it is apparently imported with plants from West-India. I have earlier determined it to be an *Alloniscus* and akin to *All. cornutus* B.-L. (Conf. K. Kraepelin: »Ueber die durch Schiffverkehr in Hamburg eingeschleppten Tiere«. Mitt. Naturh. Mus. Hambg. XVIII p. 204, Nr. 465).

Scleropactes.

Flagellum antennarum 3-articulatum.

Pleuræ capitis concretæ; linea marginalis verticalis ad oculos producta.

Trunci segmentum primum post integrum.

Pleopodum rami operculares nullis tracheis.

Telson breve, rotundate triangulum, epimeris segmenti pænultimi multo brevius.

Uropodes breviores vel mediocres: Exopoditum mediocre, teretiunculum, scapi lateri interiori insertum, scapo non longius; endopoditum longum, scapo longius.

Corpus valde convexum, in globum contractile.

Oculi congregati; ocelli sat numerosi.

Lamina exterior maxillæ prioris parvis dentibus septem integris munita.

Antennæ longæ, corpus dimidium longitudine æquantes vel paulum superantes; scapi articuli ad apicem versus sensim longitudine crescentes, articulus 4. gracilior quam 2. sed fere duplo longior.

Antennularum articulus 3. longus.

Epistoma convexum, lineam marginalem frontalem continuam formans, post lineam marginalem sulco transverso a fronte discretum.

Trunci segmenta pronotum magnum, dimidio dorso segmenti æquale vel longius, habent.

1. *Scleropactes concinnus*.

(Tab. VII fig. 1-10).

Scleropactes concinnus B.-L. Crust. Is. Terr. 240.

Patria: Ecuador, at Tambillo, a little town west by south of Quito in the west decline of the Andes mountains.

2. *Scleropactes incicus*.

Scleropactes Incicus B.-L. Crust. Is. Terr. 241.

Patria: Peru.

Remarks. The two other species I have registered in this genus, *Sc. peruvianus*, Crust. Is. Terr. 241, and *Sc. senex*, Ent. Medd. 1893. 128, must be excluded and related to the subfamily *Oniscinæ*, having affinity to the genus *Sphaeroniscus* Gerst.

Suarezia.

Flagellum antennarum 3-articulatum.

Pleuræ capitis concretæ.

Trunci segmentum primum et secundum epimeris post fassis.

Pleopodum opercula omnium parium tracheis instructa.
Telsum breviter triangulum, epimera segmenti præcedentis paulum superans.

Uropodes breves: Exopoditum parvum, vix duplo longius quam latius, scapo multis partibus brevius, angulo postico lateris interioris scapi insertum: endopoditum brevius, scapo brevius.

Corpus valde convexum, in globum contractile.

Oculi congregati; ocelli numero c. 20.

Lamina exterior maxillæ prioris parvis dentibus novem integris munita.

Antennæ breviores, tertia corporis parte vix longiores; scapi articulus 1. perbrevis; articulus 2. longus, articulo 3. multo longior, articulo 4. subæqualis, articulo 5. paulo brevior; flagelli articulus 1. brevissimus, duo articuli sequentes subæquales, vel 3. longissimus, apice seta longiore instructus.

Epistoma supra margine obsoletiore, in medio deletum, a fronte discretum; clypeus subhorizontalis, lobis lateribus parvis.

Trunci segmenta pronoto manifesto, tertiam partem medii dorsi æquante.

Suarezia heterodoxa.

(Tab. VI fig. 18-23).

Mesarmadillo heterodoxus Dollf, Mém. soc. zool. France. VIII. 1895, p. 181, f. 2.

Patria: Madagascar. Mr. Ch. Alluand has taken some specimens of this species in the mountain »Ambre« in the peninsula »Diego-Suarez«, and Mr. Adr. Dollfus has been kind enough to give me one specimen.

Sunniva.

Flagellum antennarum 2-articulatum?

Pleuræ capitis coneretæ.

Trunci segmenta duo priora epimeris post fissis.

Pleopodum rami operculares omnium parium tracheis instructi.

Telsum brevius, subtriangulum, apice subtruncatum, epimera segmenti pænultimi nonnihil superans.

Uropodes breviores: Exopoditum brevius, teres, triplo longius quam latius, angulo postico lateris interioris scapi insertum.

Sunniva mystica.

Patria: Madagascar. (Mus. Hamburg).

Remarks. This species will be fully described in a treatise, which will appear in »Voeltzkow Reiseergebnisse«. Bd. III. Abhandl. Senckenberg. Gesellschaft Bd. XXVII.

Saïdjahus.

Flagellum antennarum 2-articulatum.

Pleuræ capitis concretæ; linea verticalis marginalis ad oculos producta.

Trunci segmentum primum epimeris duplicatura magna ante percrassis, post fissis.

Telsum brevius, triangulum, lateribus incurvis, epimera segmenti pænultimi vix vel paululum superans.

Uropodes breviores; exopoditum parvum, tenue, lateri posteriori scapi insertum.

1. Saïdjahus creper.

(Tab. VI fig. 24—29).

Paulum oblonge-ovalis, convexus, nitidus, minutissime punctatus, glaber, non hirsutus.

Oculi magni; ocelli numero c. 20.

Antennæ longæ, dimidium corpus superantes; scapi articulus 1. perbrevis, articulus 2. satis magnus, paulo longior et multo crassior quam articulus 3.; articulus 4. gracilis, ar-

ticulis 2. et 3. conjunctis paulo brevior; articulus 5. gracilis, articulis 3. et 4. conjunctis paulo brevior; flagellum 2-articulatum, pergracile, $\frac{2}{3}$ articuli 5. scapi longitudine expleus, articulus alter priore paulo longior apice seta longa.

Frons ab epistomate nisi in lateribus non discreta.

Truncus: Segmentum 1. duplicatura ante perlata, post angustiore, procul ab angulo postico desinente; ipse margo leviter sulcatus post fissus, lamina interiore brevi. Segmentum 2. epimeris integris, ante crassioribus.

Pedes longi, graciles.

Cauda: Segmenta epimeris brevioribus; epimera segmenti 5. apicibus paulum convergentibus. Pleopodes omnium parium tracheis instructi; operculum primi paris parvum, solum tracheam continens.

Telsum quarta parte brevius quam latius, triangulum, lateribus leviter incurvis, apice acutiore in speciminibus nonnullis obtuso, epimera segmenti præcedentis paululum superans.

Uropodes: Scapus oblique tetragonus, telso non brevior, latere posteriore incurvo, extra in dentem obtusior. intus in dentem majorem, acutum producto, latere exteriori sulcato. Exopoditum parvum, gracile, scapo fere triplo brevius. Endopoditum longius, compressiusculum, telsum paululum superans.

Color griseus, maculis pallidioribus deletis sæpe pallidus.

Long. 10 m. m. Lat. 4,5 m. m.

Patria: Borneo, at Telang and at Pagat (Mr. Grabowski in Mus. Berlin).

2. Saïdjahus elegans.

Mesarmadillo elegans Dollf. in Weber, Reise Niederl. O.-Ind. IV. 365. Tb. 14. f. 14.

Patria: Celebes.

3. Saïdjahus orientalis.

Mesarmadillo orientalis Dollf. in Weber, Reise Niederl. O.-Ind. IV. 368. Tb. 14. f. 13.

Patria: Celebes.

4. *Saïdjahus guttatus*.

Mesarmadillo guttatus Dollf. in Weber, Reise Niederl. O.-Ind. IV. 370. Tb. 14. f. 15.

Patria: Sumatra?

Ambounia.

Ambounia Suarezii.

(Tab. VI fig. 30).

Ambounia Suarezii Dollf. Mém. soc. zool. Fr. VIII. 182.

Patria: Madagascar.

Remarks. I have seen the only existing specimen, which is kept in the museum at Paris. During a journey in Paris, Mr. Dollfus had the kindness to borrow the glass with this little specimen from the museum to show me and as far as I can decide after an examination through the glass of the little tube, in which the specimen was preserved, I think that this species will eventually be placed here. I give in Tb. VI Fig. 30 the contours of the telsum with uropods as they seem to me to present themselves because the figure and description of it given by Dollfus are not correct.

Spherillo.

Among the terrestrial Isopods which were discovered during the United States exploring expedition. Dana separated 4 new species, which he placed in his genus *Spherillo*; they were all found in New Zealand or in other islands of the Pacific Sea; later he has added one new species from California. Dana characterised his new genus to separate it from *Armadillo*, of which he had but one species, (*Armadillo speciosus* from New Zealand), by the uropods. meaning that *Armadillo* wanted the exopodit, whilst *Spherillo* has the exopodit more or less developed. If this character really will be found in *Arm. speciosus* Dana and can be taken as sufficient to establish a new genus,

it will neither be *Armadillo* nor *Spherillo*, as up to the present no species are found belonging to the two genera in which the exopodit on the uropods is wanting, though there are species of both genera, which have it very small, whilst other species of both genera have it tolerably large. As the four species of Dana are belonging to the genus *Spherillo*, as I here have limited it, and thus the name »*Spherillo*« is free, I have proposed it for my present genus.

It is but with great difficulty I could contrive to set up the following sections for the species of this genus, and the contents of all the sections, I confess, are not all completely natural. The most of the species are found in the islands of the Indian and Pacific Seas, and many of these islands appear to have species peculiar to them and to present types for different sections. Because these islands probably are remains of earlier continents, which are tardily submersed in the sea, the now living Terrestrial Isopods are relics from a fauna, which has developed itself variously in the different islands.

Conspectus sectionum specierum.

a. Pronotum breve.

b. Pleopodes primi paris in femina area operulari nulla fere.
Dorsum echinatum.

Sectio I. Typus: *Spherillo erinaceus* B.-L. species 1-5.

bb. Pleopodes primi paris in femina area operulari parva.
Dorsum laeve.

Sectio II. Typus: *Spherillo sollers* B.-L. species 6.

bbb. Pleopodes primi paris in femina area operulari majore.
Dorsum tuberculatum.

Sectio III. Typus: *Spherillo Macmahoni* Chilt. species 7.

aa. Pronotum longum.

b. Pleopodes primi paris in femina area operulari magna.
c. Flagelli articuli longitudine subæquales.

Sectio IV. Typus: *Spherillo hawaiiensis* Dana species 8.

cc. Flagelli articulus prior altero duplo vel triplo brevior.

- d. Trunci segmentum primum epimeris crassis, post fassis, margine laterali per totam longitudinem sulcato.
- Sectio V. Typus: *Spherillo grossus* B.-L. species 9—12.
- dd. Trunci segmentum primum epimeris crassioribus, plica inferiore minore instructis, margine laterali non sulcato.
- Sectio VI. Typus: *Spherillo ambitiosus* B.-L. species 13—15.
- ddd. Trunci segmentum primum epimeris subtenuibus, revolutis, post fassis, margine laterali non sulcato.
- Sectio VII. Typus: *Spherillo rugulosus* Miers. species 16.
- dddd. Trunci segmentum primum epimeris tenuibus, integris.
- Sectio VIII. Typus: *Spherillo bifrons* B.-L. species 17—25.
- bb. Pleopodes primi paris in femina area operculari nulla.
- c. Trunci segmentum 1. epimeris minus crassis vel tenuibus, post aut integris aut leviter fassis aut plica vel dente inferiore parvo instructis, margine laterali non sulcato.
- d. Epistoma margine superiore utrinque tumido.
Trunci segmentum 1. epimeris post integris.
- Sectio IX. Typus: *Spherillo dispersus* B.-L. species 26—27.
- dd. Epistoma margine superiore simplici, frontem aut plus aut minus aut non superante.
- e. Caput vertice crassiore.
Trunci segmentum 1. epimeris post integris, dente inferiore instructis.
- Sectio X. Typus: *Spherillo rugosus* B.-L. species 28—35.
- ee. Caput vertice tenui.
- f. Telsum margine postico triangulo producto.
Trunci segmentum 1. epimeris post integris, plica inferiore instructis.
- Sectio XI. Typus: *Spherillo bicoloratus* B.-L. species 36—37.
- ff. Telsum margine postico subrecto.
- Sectio XII. Typus: *Spherillo testudinalis* B.-L. species 38—47.
- cc. Trunci segmentum 1. epimeris crassis, margine laterali per longitudinem sulcato, post fisso.
- Sectio XIII. Typus: *Spherillo montivagus* B.-L. species 48—65.

Sectio I. I know but one species belonging to this group; I refer to the description given by me of this spe-

cies and to the figures in Tab. VII as well as to the conspectus of the groups given above.

1. *Spherillo erinaceus*.

(Tab. VII fig. 11—15).

Armadillo erinaceus B.-L. Crust. Is. Terr. 36.

Patria: Island Upolu. (Mus. Kjøbenhavn, Mus. Hamburg).

In this section I place some thorny species described by different authors. I have never seen specimens of them, and perhaps they have relations to other groups:

2. *Spherillo spinosus*.

Spherillo spinosus Dana, Expl. Exp. Crust. 723. Tb. 47, f. 6a—g.

Armadillo spinosus Chilt. Tr. Lin. soc. Lond. 1901. 150.

Patria: New Zealand, near Bay of Islands: from under the bark of pine trees. (Un. St. Expl. Exp.).

3. *Spherillo Hamiltoni*.

Rem. Sculpt. Terr. Isopod. G. M. Thomson, in An. Nat. hist. S. 6. XII. 225. Tb. 4.

Armadillo Hamiltoni Chilt. Tr. Lin. soc. Lond. 1901. 148.

Patria: New Zealand, at Petane near Napier.

4. *Spherillo albospinosus*.

Armadillo albospinosus Dollf. Fauna Hawaiiensis II. 521. Tb. 20, f. 2a—g.

Patria: Sandwich Islands. In Oahu at Kawailoa (sec. Dollfus).

5. *Spherillo carinulatus*.

Armadillo albospinosus Dollf. l. c. Tb. 20, f. 2h. ♀

Patria: Sandwich Islands. In Kauai at Makaweli (sec. Dollf.).

Remarks. I regard it to be without doubt that the female specimen described by Dollfus is a different species.

Sectio II. Also only one species belonging to this

group is known, and the chief characters are given in the description of the species below.

6. *Spherillo sollers*.

(Tab. VII fig. 16—17).

Superficies lævis, nitida, minutissime reticulate punctata. Oculi mediocres, ocelli numero c. 20.

Epistoma convexum, supra paulum reflexum, margine superiore frontem nonnihil superante, cum linea marginali laterali capitis utrinque ante oculos ascendente conjuncto. Clypeus subperpendicularis, brevis, lobis lateralibus majoribus, oblonge ovalibus.

Trunci segmentum 1. margine laterali crasso, per totam longitudinem profunde sulcato, ante in angulum acutum producto, post profunde et subæqualiter fisso: lacinia interior exteriore vix major. Epimerum segmenti 2. dente parvo, interiore munitum; epimerum segmentorum 5.-6.-7. duplicatura interiore magna sed minus manifesta munitum. Pronotum segmenti 2. breve, vix plus quam decimam partem dorsi explens; segmenti 6. pronotum fere sextam partem explet.

Caudæ segmenta epimeris simplicibus, subacute rectangularibus, nulla duplicatura et nullo processu inflexo instructis. Pleopodes primi paris in femina nullam aream opercularem solum tracheam habent.

Telsonum mediocre, quarta parte latius quam longius; basis paulo latior quam apex; in medio satis coarctatum, supra convexiusculum, in basi utrinque leviter impressum, margine postico leviter rotundato.

Uropodium scapus paulo longior quam latior, postice valde, subtriangule angustatus. Exopoditum minutissimum, supra procul ab apice et paulum a latere interiore scapi positum. Endopoditum telso paulo brevius.

Subunicolor, griseus.

Long. 9,5 m. m. Lat. 5 m. m.

Patria: At Rockhampton in New-Holland. I have seen but one specimen of this species; it was at that time over-

looked being among several specimens of *Spherillo grossus*, bought of the Museum Godeffrey in Hamburg many years ago.

Sectio III. Also in this group I have introduced only one species. I give as supplement to the description of Chilton a new description below.

7. *Spherillo Macmahoni*.

(Tab. VII fig. 18—21).

Armadillo *Macmahoni* Chilton, Tr. Lin. soc. Lond. 1901. 149. Tb. 16, f. 8.

Caput vertice crasso. subbituberculato. Trunci segmenta 6 priora in margine posteriore tuberculis quaternis magnis, segmentum 7. tuberculis duobus validis, subconcretis. Caudæ segmenta 5.-6. tuberculo medio majore. Omnia tubercula, maxime posteriora, hirsuta; cetera superficies squamata: caput et segmenta duo anteriora ad latera leviter rugosa.

Oculi parvi, a margine paulum distantes; ocelli numero 7-8, majores.

Antennæ breviores; articuli 2. et 4. longitudine subæquales; flagelli articulus alter priore triplo longior.

Epistoma supra reflexum, margine superiore frontem in lateribus paulum in medio vix superante, et hic lineam leviter incurvam formante. Clypeus longior, subperpendicularis, lobis lateralibus perparvis, rotundatis. Linea verticalis capitis post crassa, utrinque ante oculos ad marginem superiorem epistomatis ducta et cum hoc conjuncta. Area infraocularis manifesta.

Trunci segmentum 1. margine laterali crassiore, revolutum, ante intra marginem leviter sulcatum, post fissum: lamina exterior interiore paulo longior. Segmentum 2. epimero processu interiore parvo, obtuso, retro ducto. Pronotum segmentorum decimam partem dorsi vel paulo plus explens.

Caudæ segmenta duo priora segmento septimo trunci fere occulta; segmenta 3.-4.-5. processu inferiore nullo.

Pleopodes primi paris in femina aream opercularem parvam et tracheam magnam habent.

Uropodes breves. Scapi basis magna, declivis. Exopoditum perbreve, vix duplo longius quam latius, subpunctiforme, lateri interiori scapi procul ab apice insertum. Endopoditum breve, duplo longius quam latius.

Patria: New Zealand. I have seen a specimen preserved in the Museum at Dundee; it was presented by Mr. Chilton, and taken at Marlborough in New Zealand.

Sectio IV. The only known species of this group takes an isolated place here on account of the exceptional length of the antennæ. I give below a detailed description of this species because I earlier have mistaken it.

8. *Spherillo hawaiiensis*.

(Tab. VII fig. 22—26).

Spherillo Hawaiiensis Dana, Expl. Exp. Crust. 722. Tb. 47, f. 5 a—e.
Armadillo bidens B.-L. Crust. Isop. Terr. 18. (♂).

“ *australis* B.-L. *ibid.* 33. (♀).

“ *hawaiiensis* Dollf. Fn. *Hawaiiensis* II, 521. Tb. 20, f. 1 a—b.

Oblonge ovalis, convexus, lævis, subnitidus, minutissime et densissime punctatus; trunci tuberculositates ordinariae subdeletæ.

Oculi mediocres, oblongi, a margine paululum distantes; ocelli triseriati, numero e. 15—18.

Antennæ graciles, dimidio corpore paulo breviores; flagellum $\frac{2}{3}$ scapi articuli 5. longitudine explens; flagelli articuli subæquales, vel prior paululo brevior.

Epistoma margine superiore frontem paululum superante. Clypeus lobis lateralibus majoribus, triangularibus; in medio clypeo apud marem dentes duo, acuti prominentes. Linea verticalis marginalis capitis tenuis, ad latera capitis aream infraocularem angustam complectens, epistoma non attingens.

Trunci segmentum 1. epimeris crassis, margine laterali per totam longitudinem minus manifesto sulcato, post leviter et paulum oblique fisso: lacinia interior major: seg-

menti 2. epimerum processu interiore minuto, dentiformi; margo posterior omnium segmentorum subtransversus vel utrinque levissime sinuatus. Pronotum segmentorum permagnum tertiam partem dorsi vel plus explens.

Caudæ segmenta duo priora majora: segmenta 3.-4.-5. epimeris brevioribus, subrectangulis, nullo processu inferiore instructis; epimera segmenti 5. subparallela. Pleopodes primi paris in mare atque in femina areis opercularibus magnis instructi, maris intus triangule retro ductis.

Telsonum tertia parte latius quam longius, in medio vix coarctatum; apex brevis, tamen longior quam basis, transverse subrectangulus, margine postico leviter curvato, subrecto.

Uropodium scapus fere latior quam longior, subquadrangulus. Exopoditum minutissimum, subpunctiforme, lateri interiori scapi procul ab apice insertum. Endopoditum mediocrem, telso brevius.

Unicolor, albidus.

Long. 12—14 m. m. Lat. 5—6 m. m.

Patria: Sandwich Islands: Oahu (Mr. Kjellerup in Mus. Kjøbenhavn, Mr. Behn in Mus. Kiel); Lanai; Kauai, Makaweli; Hawaii, Lihue (sec. Dollfus l. c.); Molokai at Kalae (Dr. Schauinsland in Mus. Bremen).

Remarks. In a collection of Isopods belonging to Dr. Schauinsland at Bremen, which he has been kind enough to send me in the year 1899, were some specimens of this species. I instantly found out, that I had separated the male and the female specimens as two species. It may serve as an excuse for me, that the material I have had for examination from the Museum at Kiel and at Kjøbenhavn during the course of some years was incomplete, and it was remarkable, that the male specimens went to the Museum at Kiel, the female to the Museum at Kjøbenhavn, although both lots were collected from Oahu by the Galatea expedition in the year 1846. In the spring 1900 I was at Paris and visiting Mr. Dollfus I have enlightened him over this relation, which he has corrected in his above cit. paper.

Sectio V. The first species, *S. grossus*, belonging to this group I have described before but shall here give some further characters; furthermore I refer here three new species for which I cannot for the time being find better place.

9. *Spherillo grossus*.

(Tab. VII fig. 27—33).

Armadillo grossus B.-L. Crust. Is. Terr. 19.

Paulum oblonge-ovalis, valde convexus, nitidus, dense et manifesto punctatus.

Oculi mediocres; ocelli numero c. 22-25.

Antennæ tertia parte corporis vix longiores; flagelli articulus prior altero duplo brevior.

Caput perbreve, plus quadruplo latius quam longius; linea marginalis verticalis utrinque ad oculos producta, linea inframarginalis aream infraocularem magnam complectitur. Epistoma margine superiore subrecto, frontem non superante. Clypeus supra leviter marginatus, lobis satis magnis, rotundate triangulis.

Trunci segmentum 1. epimeris crassis, margine laterali subaltecincto, per longitudinem leviter sulcato, post profunde et paulum inæqualiter fisso: lacinia interior major. Epimera segmenti 2. leviter fissa, interiore parte minima; epimera segmentorum 4.-5.-6.-7. subtus duplicatura anteriore leviore. Margo posterior omnium segmentorum, ultimo medio leviter incurvo excepto, subtransversus. Pronotum segmentorum circiter quartam partem dorsi longitudine æquans.

Caudæ segmenta 3.-4.-5. epimeris mediocribus, nullo processu inferiore instructis. Pleopodes primi paris in mare atque in femina areis opercularibus majoribus, in femina subtransversis in medio inter se subattingentibus, in mare intus apice longe retro ducto, acutiore, inter se nonnihil distantibus.

Telsonum tertia parte vel plus latius quam longius, in medio satis coarctatum, margine postico leviter curvato.

Uropodum scapus vix longior quam latior; exopoditum

parvum, lateri interiori prope apicem insertum; endopoditum telso satis brevius.

Colore plumbeo griseo, subunicolor.

Long. 20—25 m. m. Lat. 8—11 m. m.

Patria: New Holland: Rockhampton (Mus. Berlin, Hamburg, Kjobenhavn, St. Petersburg), Cap York, Gayndah (Mr. Dämel in Mus. Hamburg), Sydney (Mus. Berlin).

10. Spherillo collaris.

Ovalis, convexus, subopacus, minutissime et dense squamate punctatus.

Oculi magni, fere totum latus capitis occupantes; ocelli majores, numero c. 17.

Antennæ dimidium corpus longitudine subæquantes: scapi articulus 4. paulo longior quam 2.; flagelli articulus 1. quadruplo vel plus brevior quam 2.

Caput breve; linea marginalis verticalis utrinque ad oculos desinit; linea inframarginalis aream infraocularem complectitur. Epistoma supra leviter reflexum, margine superiore subrecto, frontem non superante. Clypeus fornicatus, lobis lateralibus parvis, subtriangulis.

Trunci segmentum 1. epimeris crassis, margine laterali per longitudinem sulcato, sulco ante deleto, post satis profunde et paulum inæqualiter fisso: lacinia interior minor; epimera segmenti 2. leviter fissa, parte interiore denti parvo, acuto, simili; epimera segmenti 5.-6.-7. subtus duplicatura anteriore leviore. Margo posterior omnium segmentorum, septimo medio leviter incurvo excepto, subtransversus. Pronotum segmentorum circiter quartam partem dorsi longitudine æquans.

Caudæ segmenta 3.-4.-5. epimeris mediocribus, processu inferiore nullo. Pleopodes primi paris in femina tracheis magnis atque areis opercularibus satis evolutis in medio subattingentibus.

Telsum tertia parte vel plus latius quam longius, in medio leviter coarctatum, margine postico recto.

Uropodum scapus ejusdem longitudinis et latitudinis, ad apicem vix angustatus. Exopoditum minimum vix duplo longius quam latius, lateri interiori scapi nonnihil ab apice insertum. Endopoditum perbreve.

Unicolor, griseus.

Long. 7 m. m. Lat. 3,5 m. m.

Patria: Island Mauritius. I have seen only one specimen taken by Dr. Emmerly (Mus. Dollfus).

11. Spherillo squamatus.

Superficies opaca, dense rugose squamata.

Oculi magni, ocelli numero c. 23.

Antennæ?

Epistoma margine superiore in medio paulum reflexo, deletiore, frontem non superante, in lateribus margine crassiore frontem paululum superante. Clypeus lobis majoribus oblonge rotundate triangulis.

Trunci segmentum 1. epimeris crassis, margine laterali per longitudinem supra sulcato, sulco latiore sed leviore, post paulum oblique fisso: lacinia interior prominens exteriore tamen paulo brevior; epimera segmenti 2. ante plica parva obtusa, crassiore. Margo posterior segmentorum 1.-2.-3. utrinque leviter incurvus, segmenti 4. subrectus. Pronotum quarta parte dorsi segmentorum fere longius.

Caudæ segmenta 3.-4.-5. epimeris mediocribus, oblique subrectangulis, processu inferiore nullo. Pleopodes primi paris in femina areis opercularibus satis magnis.

Telson vix quarta parte latius quam longius, in medio levius coarctatum; apex paulo longior quam basis, margine postico leviter curvato.

Uropodum scapus nonnihil longior quam latior, basis brevis; exopoditum parvum, duplo longius quam latius, angulo lateris interioris scapi insertum; endopoditum mediocre, apicem tarsi non attingens.

Subunicolor, pallescens griseus.

Long. 11 m. m. Lat. 5,5 m. m.

Patria: New Zealand. One female specimen from Lyttelton near Christchurch. (Mus. Hamburg*).

12. *Spherillo bipunctatus*.

Tota superficies squamulis minutis sparse oblecta.

Oculi majores; ocelli numero c. 18, inter se paulum distantes.

Antennæ?

Epistoma margine superiore, in medio leviter reflexo, frontem ipsam superante, in lateribus paulo plus. Clypeus lobis majoribus, oblonge, triangulis, acutis. Frons media punctis duobus impressis.

Trunci segmentum 1. epimeris crassis, margine laterali per longitudinem sulcato, sulco maxime ante angustiore, profundo, post subæqualiter fissio: lacinia interior rotundata; epimera segmenti 2. leviter fissa: lacinia interior acuminata. Margo posterior segmenti 1. utrinque leviter incurvus; margo posterior segmenti 2. utrinque levissime, vix conspicue incurvus; margo posterior sequentium segmentorum subrectus. Pronotum quintam partem vel vix quartam partem dorsi æquans.

Caudæ segmenta 3.-4.-5. epimeris mediocribus, subrectangulis, processu inferiore nullo. Pleopodes primi paris in mare areis opercularibus satis magnis, intus vix retroductis.

Telsum quarta parte latius quam longius, in medio satis coarctatum; apex brevior quam basis, margine postico leviter curvato, subrecto.

Uropodum scapus nonnihil longior quam latior; basis magna, subquadrata; apex angustatus. Exopoditum parvum, duplo longius quam latius, angulo lateris interioris scapi insertum. Endopoditum breve, apicem telsi non attingens.

*) This specimen was together with the specimen of the following species and one specimen of *S. Tarangensis* bought by the Museum of Mr. Suter in Christchurch, and all determinated as *Arm. rugulosus* Miers.

Subunicolor, brunneus, maculis et punctis minutis pallidioribus conspersis.

Long 7 m. m. Lat. 3,5 m. m.

Patria: New Zealand. One male specimen from Lyttelton (Mus. Hamburg).

Sectio VI. The species belonging to this section have tolerably thick margin in the first segment of the truncus, but otherwise the epimer is not thick, but inwards to the leg is a keelshaped line behind finished in a more or less acute tooth. The three species I introduce in this section have some common characters which I shall give in terms.

Oculi majores, ipsum marginem capitis occupantes.

Antennæ tertia corporis parte vix longiores, graciliores; scapi articulus 2. manifesto brevior quam articulus 4.; flagelli articulus 1. duplo vel triplo brevior quam articulus 2.

Antennulæ: articulus tertius longus, acutus.

Epistoma margine superiore frontem vix vel paululum superante. Tubercula antennaria majora, supra acutiora. Clypeus lobis lateralibus majoribus, subtriangulis. Linea verticalis subtenuis, utrinque infra oculos producta, epistoma non attingens, aream infraocularem longam sed angustam formans.

Trunci segmentum 1. epimeris subtenuibus, ipso margine autem crassiore, infra leviter in longitudinem carinatis, carina in dentem parvum obtusum finiente. Margo posterior utrinque profundius incurvus. Segmentum 2. epimeris dente inferiore parvo vel nullo fere. Pronotum satis magnum.

Caudæ segmenta 3.-4.-5. nullo processu inferiore. Pleopodes primi paris in femina areis opercularibus magnis, subtransversis, in medio inter se attingentibus.

Superficies sublævis.

13. *Spherillo ambitiosus*.

Armadillo ambitiosus B.-L. Crust. Is. Terr. 34.

" " Chilt. Tr. Lin. soc. Lond. 1901. 144. Tb. 16. f. 5.

Ocelli numero 18—20.

Epistoma margine superiore frontem non superante nisi in lateribus paululum. Clypeus lobis subtriangulis.

Trunci segmenti 2. epimera dente inferiore perparvo.

Telsum fere ejusdem longitudinis et latitudinis: apex longior quam basis, margine postico cum angulis lateralibus late rotundato.

Uropodum scapus multo longior quam latior; apex multo longior quam basis, postice paulum angustatus. Exopoditum mediocre, longius ab apice scapi insertum et apicem non attingens. Endopoditum gracile, longum, marginem posteriorem telsi fere attingens.

Unicolor, griseus vel brunneus.

Long. 12—14 (—15) m. m. Lat. 6—7 m. m.

Patria: New Zealand. I have seen specimens of this species from several localities. Prof. Schauinsland has taken several specimens in Stephens Island, Rangitoto Island and at Waikava by French Pass. (Mus. Bremen). Also from Stephens Island (Dr. Thilenius in Mus. Berlin), and from Greymouth (Prof. Chilton in Mus. Dundee) I have seen specimens. After Prof. Chilton this species is widely distributed in the North Island, and has several varieties.

14. *Spherillo rufomarginatus*.

(Tab. VII fig. 34—36).

Ocelli numero 20.

Epistoma margine superiore frontem paululum maxime in lateribus superante. Clypeus lobis triangulis ante convexis.

Trunci segmentum 2. epimeris dente inferiore majore, acutiore instructis.

Telsum quarta parte latius quam longius: basis et apex subæque longa, margine postico levissime curvato, angulis lateralibus acutioribus.

Uropodum scapus paulo longior quam latior, apex paulo longior quam basis, postice vix angustatus. Exopoditum mediocre, longius ab apice scapi insertum et apicem

non attingens. Endopoditum crassius, mediocre, marginem posteriorem telse non attingens.

Color e griseo brunneus, toto margine laterali cum telso rufo.

Long. 15 m. m. Lat. 7,5.

Patria: New Zealand. One female specimen was taken at Taranga by Dr. Thilenius (Mus. Berlin).

15. *Spherillo marginatus*.

Ocelli numero 25.

Epistoma margine superiore frontem mediam vix, ad latera frontis paululum superante. Clypeus lobis rotundate triangulis, subovalibus, ante planis.

Trunci segmentum 2. epimeris dente vel plica inferiore minutissima, vix conspicua munitis.

Telsum paulo latius quam longius; basis et apex subæque longa, margine postico cum angulis lateralibus rotundatis leviter curvato.

Uropodum scapus nonnihil longior quam latior; apex multo longior quam basis, postice paulum angustatus. Exopoditum majus, apici scapi propius insertum et apicem attingens. Endopoditum?

Unicolor, griseus.

Long. 10 m. m. Lat. 4,5 m. m.

Patria: New Zealand, one female specimen from Auckland. (Mus. Kjøbenhavn, bought of Mr. Suter).

Sectio VII. Here I insert but one species and give as supplement to the descriptions of other authors the following:

16. *Spherillo rugulosus*.

(Tab. VII fig. 37—39).

Cubaris rugulosus Miers, Ann. Mag. Nat. hist. s. 4. XVII. 225.

Armadillo rugulosus Chilton, Tr. Lin. soc. Lond. 1901. 147.

Superficies subopaca, minute et dense squamata.

Oculi minores; ocelli numero c. 12—14, posteriores majores.

Epistoma margine superiore frontem paululum maxime in lateribus superante. Clypeus lobis lateralibus parvis, rotundate subsemicircularis. Linea verticalis marginalis utrinque ante oculos producta, epistoma tamen non attingens, nullam aream infraocularem formans.

Trunci segmentum 1. epimeris subtenuibus, revolutis, post inæqualiter fassis: lacinia interior ovalis, exteriore multo brevior; margo posterior utrinque fortius incurvus; anguli externi late rotundati. Segmentum 2. epimero ante crassiore, dente inferiore parvo, obtuso instructo; margo posterior ut in segmentis sequentibus utrinque levius incurvus; anguli posteriores segmentorum 2.-5. late rotundati. Pronotum segmenti secundi quarta vel etiam quinta parte dorsi vix longius.

Caudæ segmenta 3.-4.-5 epimeris mediocribus vel majoribus, nullo processu inferiore instructis; epimera segmenti quinti parallela vel subconvergentia. Pleopodes primi paris in femina areis opercularibus magnis in medio inter se fere attingentibus.

Telsum tertia parte latius quam longius, in medio levissime coarctatum, post transverse truncatum.

Uropodum scapus paulo longior quam latior, margine exteriore leviter curvato, margine interiore leviter incurvo. Exopoditum parvum, fossæ superiori scapi insertum, procul ab apice et satis a latere interiore distans; endopoditum telso multo brevius.

Color nigro-rufus, maculis creberrimis flavis conspersis.

Long. 6 m. m. Lat. 3 m. m.

Patria: New Zealand. »Very abundant in South Island« (Chilton). I have seen specimens from Milford Sound (Mus. Dundee) and two specimens from Auckland (Mr. Suter in Mus. Kjøbenhavn).

Sectio VIII. I am not sure, that I dare register in this section more than *Sph. bifrons*, and the characters are given with the earlier description of this species by me, and illustrated by the here subjoined figures (Tab. VIII).

Of the other species here registered explanation is given below.

17. *Spherillo bifrons*.

(Tab. VIII fig. 1—8).

Armadillo *bifrons* B.-L. Crust. Is. Terr. 38.

Patria: New Holland at Rockhampton (Mus. St. Petersburg).

Mr. Dollfus has described the three following species and says they are very like *Sph. bifrons*; I insert them here, but I am uncertain, however, in respect to their congeniality.

18. *Spherillo Sharpi*.

Armadillo *Sharpi* Dollf. Fn. Hawaiiensis. II. 523. Tb. 20. f. 5 a—b.

Patria: Sandwich Islands: Kauai.

19. *Spherillo Perkinsi*.

Armadillo *Perkinsi* Dollf. Fn. Hawaiiensis. II. 522. Tb. 20. f. 3 a—f.

Patria: Sandwich Islands: Maui at Haleakala.

20. *Spherillo frontalis*.

Armadillo *Danzæ* Dollf. Fn. Hawaiiensis. II. 522. Tb. 20. f. 4 a—g.

Patria: Sandwich Islands: Kauai at Makaweli.

Remarks. I have altered the name to avoid the confusion with other species, conf. Nr. 64.

The following species, for which I do not desire to form a new section, is in some respects, as it will appear by the description, tolerably different from *Sp. bifrons*.

21. *Spherillo tarangensis*.

(Tab. VIII fig. 9).

Oblonge ovalis, opacus, minute et dense squamatus; omnia trunci segmenta linea transversa elevatiore prædita.

Oculi majores; ocelli numero c. 16, inter se paululum distantes.

Antennæ graciles, dimidio corpore paulo breviores; scapi articulus 2. et 4. subæquales; flagelli articulus prior altero triplo vel plus brevior.

Epistoma margine superiore frontem perpaulum maxime in lateribus superante. Clypeus brevis, lobis lateralibus paulum oblonge triangulis. Linea marginalis verticalis capitis utrinque ad marginem superiorem epistomatis producta, aream infraocularem angustissimam formans.

Trunci segmentum 1. epimeris tenuibus, ante levissime revolutis, post integris, segmentum 2. epimeris integris; margo posterior utrinque fortiter incurvus, angulis externis retroductis, obtusis; margo posterior segmentorum sequentium etiam utrinque fortius incurvus. Segmenta 6. et 7. precedentibus segmentis multo majora. Pronotum segmenti 2. mediocre, vix longius quam quarta pars dorsi.

Caudæ segmenta 1. et 2. brevia, subocculta; segmenta 3.-4.-5. epimeris medioeribus, processu inferiore minimo; epimera segmenti 5. divergentia. Pleopodes primi paris in femina arcis opercularibus magnis, in medio inter se paulum distantibus.

Telsum tertia parte latius quam longius, in medio vix coarctatum margine postico subrecto.

Uropodum scapus paululo longior quam latior, apice oblique rotundato vix angustato. Exopoditum mediocre, fossæ superiori scapi insertum, multis partibus longius quam latius, apicem scapi tamen non attingens. Endopoditum mediocre, telso nonnihil brevius.

Color e nigro brunneus, maculis et punctis raris albidis conspersis.

Long. 7 m. m. Lat. 3,5.

Patria: New Zealand, at Taranga (Dr. Thilenius in Mus. Berlin), at Lyttelton (Mr. Suter in Mus. Hamburg).

I should think that the following species described by Dana was allied to *Sph. tarangensis*.

22. Spherillo monolinus.

Spherillo monolinus Dana, Expl. Exp. Crust. 719. Tb. 47. f. 3a—d.

Patria: New Zealand, »at Wykare River near Bay of Islands« (Expl. Exp.).

Remarks. It is uncertain if *Sph. monolinus* Heller is identical with the species of Dana.

23. *Spherillo aucklandicus*.

Spherillo monolinus Heller, Novara Exp. 135.

Armadillo Aucklandicus B.-L. Crust. Is. Terr. 40.

Patria: Auckland. (Novara Exp.).

Also perhaps belongs here:

24. *Spherillo speciosus*.

Armadillo speciosus Dana, Expl. Exp. Crust. 718. Tb. 47. f. 2a—d.

Patria: New Zealand, »in the mount Taiaimmai near Bay of Islands«. (Expl. Exp.).

Remarks. I do not believe this species is identical with *Arm. speciosus* Chilt. Tr. Lin. soc. Lond. 1901 p. 146. I have registered this last species later (Nr. 32). I agree with Chilton in his opinion, that it is probable, that Dana has overlooked the exopodit of the uropods. He cannot mean it to be minute or rudimentary, when he says »ramo obsoleto«, and has brought this character to separate the two genera *Armadillo* and *Spherillo*; but on the other side I have never seen a species of *Armadillo* or *Spherillo* completely wanting the exopodit.

One term in the description of Dana, »The last segment (3: telsum) has a faint suture across it, which appears to show the outline of a seventh normal segment«, shall certainly lead to find out the true species of Dana.

I insert also here:

25. *Spherillo vitiensis*.

Spherillo vitiensis Dana, Expl. Exp. Crust. 721. Tb. 47. f. 4a—d.

Patria: »In the island Vanua Levu« (Expl. Exp.).

Remarks. I think this species will perhaps be recognised by the description of Dana, of which I extract the following:

»Head with the eyes on the posterior angles«.

»Flagellum as long as fifth joint; fourth joint little longer than third joint, and shorter than fifth or second.

»Segments of the thorax naked, smooth, posterior margin concave.

Telson »almost truncate at apex, narrower at base and sides excavate.

»Caudal appendages much longer than broad, apex truncate and more than twice as narrow as base, outer margin straight, inner having a rectangular notch near apex.

Arm. Vitiensis Dollf. Bul. Soc. étud. sc. Paris. XII. is certainly different from the species of Dana, perhaps it will be identical with *Spher. testudinalis* B.-L.?

Sectio IX. I give below description of the only species known to me. The most remarkable character for this group, which is not found in other species is the superior margin of the epistoma which has a tumored part to both sides before the eyes.

26. *Spherillo dispersus*.

(Tab. VIII fig. 10).

Ovalis, sublævis, convexiusculus, nitidus, minute reticulate punctatus.

Oculi magni, fere totum latus occupantes; ocelli numero c. 24.

Antennæ longiores, dense hirsutæ; scapi articuli 2. et 4. subæque longi; flagelli articulus prior altero plus triplo brevior.

Caput perbreve et latum. Epistoma margine superiore crassiore, maxime in lateribus tumido, a fronte stria vel sulco discreto eamque non superante; frons utrinque ante oculos fossa parva porifera instructa. Clypeus lobis perparvis, rotundatis. Linea marginalis verticalis utrinque ad oculorum marginem anteriorem ducta, epistoma non attingens. Tubercula antennaria majora.

Trunci segmentum 1. epimeris integris, infra plica obtusa vix discreta instructis; segmentum 2. epimeris integris

ante subtus paulo crassioribus; margo posterior utrinque leviter incurvus. Pronotum segmentorum tertia parte dorsi vix brevis.

Caudæ segmenta duo priora brevia, segmentum 1. fere obtectum; epimera segmenti 3.-4.-5. subdistantia, epimera segmenti 5. valde divergentia, nullo processu inferiore. Pleopodes primi paris amborum sexuum areis opercularibus nullis.

Telsum paulo latius quam longius, in medio fortius coarctatum; basis et apex subæque longa, margine postico leviter curvato, angulis externis late rotundatis.

Uropodum scapus nonnihil longior quam latior; latus interius ad apicem fortius incurvum; apex leviter rotundatus. Exopoditum mediocre, angulo superiori scapi lateris interioris insertum, duplo vel fere triplo longius quam latius, apicem scapi non attingens. Endopoditum satis longum, apicem telsei fere attingens.

Color brunneus, ad latera linea longitudinali macularum obscuriorum ornatus; epimera pallidiora.

Long. 6 m. m. Lat. 3 m. m.

Patria: Bismarek Archipelago? Four specimens were taken in the botanical garden at Hamburg by Dr. L. Reh, who says he has found them among plants imported from Bismarek Islands. (Mus. Hamburg).

I insert here with some hesitation:

27. Spherillo Sarasinorum.

Armadillo sarasinorum Dollf. in Weber, Reise Niederl. O.-Ind. IV 358. Tb. 13. f. 1.

Patria: Celebes, at Masarang (Dr. Sarasin).

Mr. Dollfus says of this species in his description: »prosepistome ne dépassant pas le front, mais formant seulement un rebord un peu épaissi de chaque côté«, and the other characters given by this author do not prevent this.

Sectio X. The few species I have placed in this group seem all to be very alike. They have most often

their superficies more or less granulated or tuberculated. The first truncal segment is without split in the hindcorners, but has the underside of the epimer usually with a more or less determined keel, ending in a little fold or tooth. The caudal segments have a little process beneath at the base of the epimera. The surface of the telsum most often with one or sometimes with two longitudinal furrows. The exopodit of the uropods is inserted in a pit at the inner margin of the basal joint, and is conspicuous although small.

I give here some common terms for the species of this group:

Pedes maxillares: Palpus mala manifesto brevior, articulus 3. perbrevis, non multo longior quam latior.

Epistoma margine superiore tenui frontem sæpissime multum superante, in medio reflexo et plerumque impresso vel etiam fisso.

Linea verticalis marginalis capitis post in medio crassior sæpe duplex, utrinque ad margines oculorum producta, epistoma non attingens.

Trunci segmentum 1. epimeris integris, tenuibus, infra leviter per longitudinem curvate carinatis, carina in dentem parvum vel minimum desinente. Margo posterior segmentorum plerumque fortius utrinque incurvus. Pronotum $\frac{1}{5}$ — $\frac{1}{4}$ dorsi segmenti 2. explens.

Caudæ segmenta 3.-4.-5. processu inferiore inflexo parvo: epimera segmenti 5. divergentia. Pleopodes primi paris in femina nulla area operculari, in mare area operculari parva, ovali instructi.

Uropodum scapus nonnihil longior quam latior; exopoditum mediocre vel brevius, lateri interiori scapi procul ab apice insertum.

- a. Telsum in medio duabus carinis longitudinalibus instructum. (Species 28.—32.).
- b. Carinæ telsi post convergentes, paulo ante apicem subconfluentes. (Species 28.—29.).

28. *Spherillo rugosus*.

(Tab. VIII fig. 11—12).

Armadillo rugosus B.-L. Crust. Is. Terr. 291.

Superficies opaca, in capite et trunci segmentis crasse tuberculata vel rugosa; rugae plerumque senae utrinque in singulis segmentis majores; cetera superficies minute squamata.

Antennae tertia corporis parte paulo longiores; scapi articulus 2. vix brevior quam articulus 4.; flagelli articulus prior altero triplo vel amplius brevior.

Epistoma margine superiore frontem multum superante, in medio paulum reflexo, triangulo impresso. Clypeus lobis medioeribus, ovalibus.

Trunci segmentum 1. carina inferiore post in dentem parvum, acutiorem desinente; segmentum 2. epimeris dente inferiore parvo, obtuso. Margo posterior segmenti 1. fortiter, segmenti 2. et 3. leviter utrinque incurvus.

Telsum tertia parte latius quam longius, in medio fortius coarctatum, supra ad longitudinem birugosum; apex basi vix brevior.

Uropodum scapus nonnihil longior quam latior, latus exterius subrectum, latus interius leviter incurvum. Exopoditum parvum. Endopoditum breve, telso nonnihil brevius.

Color griseus, maculis paucis parvis sordide flavis conspersis; uropodes flavicantes.

Long. 9—10. Lat. 4—5 m. m.

Patria: Australia (Mr. Sonder in Mus. Berlin). I have later seen other specimens taken by Mr. Dämel at Cape York in New Holland. (Mus. Hamburg).

29. *Spherillo impressifrons*.

Spher. rugoso affinis sed minus fortiter tuberculatus.

Epistoma margine superiore frontem paulum superante; superior pars epistomatis inferiore elevatior, in medio producta, supra medium fovea parva rotunda praedita.

Telsum in medio minus fortiter coarctatum, margine postico late curvato; carinae longitudinales latae, sulco angusto modo discretae, post late concretae.

Long. c. 5.5 m. m. Lat. 2.5 m. m.

Patria: Sydney. Only one mutilated specimen, without antennæ; preserved in the museum at Hamburg.

bb. Carinæ telsi parallelæ, nonnihil ante apicem telsi desinentes. (Species 30.).

30. Spherillo iniquus.

(Tab. VIII fig. 13-14).

Superficies opaca, in medio trunci segmentorum transverse tuberculata, in epimeris linea oblique posita elevata transversa prædita.

Oculi magni, ocelli numero c. 20.

Antennæ tertiam corporis partem longitudine vix superantes; scapi articulus 2. paululo brevior quam articulus 4.; flagelli articulus 1. triplo brevior quam articulus 2.

Epistoma margine superiore frontem multo superante, in medio fortiter reflexo, et fossa oblonga subpartito. Clypeus lobis mediocribus, rotundate triangulis.

Trunci segmentum 1. carina post in dentem parvum, acutiorem desinente; segmentum 2. epimeris ante paulo crassioribus, dente inferiore minutissimo instructis.

Margo posterior segmenti 1. utrinque fortissime, subangulate incurvus, segmentorum 2.-3.-4. etiam satis fortiter utrinque incurvus.

Telsum paulo, vix quarta parte latius quam longius, in medio levissime coarctatum; basis apice multo brevior, margine postico leviter curvato.

Uropodum scapus satis longior quam latior, latus exterius late curvatum, latus interius late incurvum. Exopoditum mediocre, nonnullis partibus longius quam latius. Endopoditum brevius, telso nonnihil brevius.

Subunicolor, griseus.

Long. 7 m. m. Lat. 3,5 m. m.

Patria: New Holland, at Cape York (Mr. Dämel in Mus. Hamburg).

bbb. Carinæ telsi parallelæ, apicem telsi fere attingentes. (Species 31.—32.).

31. Spherillo canaliculatus.

Superficies opaca, in medio trunci segmentorum linea

transversa granulorum deletiorum, in epimeris linea elevata, oblique transversa munita; cetera superficies densissime et minutissime squamata.

Oculi majores; ocelli numero c. 20.

Antennæ tertia corporis parte vix longiores; scapi articulus secundus quarto subæqualis; flagelli articulus 1. triplo brevior quam articulus 2.

Epistoma margine superiore frontem paulum superante, in medio impresso et fisso. Clypeus lobis parvis, rotundatis. Linea verticalis minus crassa.

Trunci segmentum 1. carina deletiore post in dentem obtusum, pæne deletum desinente; segmentum 2. epimeris ante paululo crassioribus, nullo processu inferiore; margo posterior priorum segmentorum leviter, sequentium levissime utrinque incurvus.

Telsum tertia parte longius quam latius, in medio satis coarctatum; apex basi paulo brevior, margine postico subrecto.

Uropodum scapus paulo longior quam latior; latus exterius subrectum, latus interius leviter incurvum. Exopoditum minimum, duplo modo longius quam latius. Endopoditum mediocre. apicem telsi fere attingens.

Color brunneus, maculis crebris flavis vel albidis conspersis.

Long. 7—7,5 m. m. Lat. 3,5—3,7 m. m.

Patria: Chatham Islands (Prof. Schauinsland in Mus. Bremen).

32. *Spherillo chathamensis*.

Armadillo speciosus Chilt. Tr. Lin. Soc. Lond. 1901. 146.

Patria: Chatham Islands. (Mr. Hutton sec. Chilton).

Remarks: I have above, No. 24, given the reason why I don't believe that the *Arm. speciosus* Dana is identical with *Arm. speciosus* Chilt. The description of Chilton agrees in the most parts with the relations of *Sph. canaliculatus* B.-L., but in this species the telsum has a remarkable character, which scarcely would have escaped the

examinations of Mr. Chilton, and for that reason I think his *Arm. speciosus* is a new species.

aa. Telsum in medio basis stria longitudinali. (Species 33.—35.).

33. *Spherillo translucidus*.

(Tab. VIII fig. 15—22).

Armadillo translucidus B.-L. Crust. Is. Terr. 290.

Patria: Nova Caledonia, at Noumea.

34. *Spherillo cinctutus*.

Pyrgoniseus cinctutus (White) Kinah. Proc. Dublin Univ. I. 2. 199—200. Tb. 19. f. 7.

Patria: It was procured in the Eastern Seas during the exploration of H. M. S. Herald*. (Mus. London).

35. *Spherillo exilis*.

Armadillo exilis B.-L. Crust. Isop. Terr. 288.

Patria: Noumea in Nova Caledonia.

Remarks. I originally described this species after a very mutilated specimen, and I am not sure if it belongs here or not.

Sectio XI. The two species I place in this group have many points in which they resemble each other, but I am not quite convinced, however, that both will eventually remain in it.

Both species have a little fold in the inferior side of the thin epimer of the first truncal segment, both have very long antennæ, especially it is remarkable, that the fourth joint of the scapus is much longer than the second; the fifth joint is also extraordinarily long, while the flagellum is very short, but a little longer than a third of the fifth joint. Remarkable also is the large tubercle of the antennæ, partly covering the basal joint, also the large triangular lobes of the clypeus; the long and slender legs, which proportionally increase much more behind than is usual; and finally the form of the telsum as mentioned in the conspectus.

I supply my earlier description of *S. bicoloratus*, chiefly for comparison with the other species newly procured; both species have a striking likeness with the species of *Armadillo* belonging to the group of *Arm. murinus*.

36. *Spherillo bicoloratus*.

(Tab. VIII fig. 23—35).

Armadillo bicoloratus B.-L. An. Mus. Gen. s. 2. XIV. 602.

Oblonge ovalis, convexiusculus, laevis, nitidus.

Oculi mediocres, intra marginem capitis positi; ocelli numero c. 21—24, inter se paulum distantes.

Antennarum scapi articulus 2. vix longior quam 3., multo brevior quam 4.; articulus 5. perlongus, tertia fere parte longior quam 4.; flagelli articulus alter priore duplo vel plus longior.

Epistoma margine superiore frontem in medio paululum in lateribus satis superante, angulis lateralibus late rotundatis. Linea verticalis marginalis utrinque, extra oculos et ante oculos incurva, ad epistoma producta. Clypeus lobis magnis, oblongis, subtriangulis. Tubercula antennaria magna.

Trunci segmentum 1. lacinia vel plica inferiore parva, rotundata; anguli anteriores et posteriores late rotundati. Segmentum 2. lacinia inferiore parva, rotundata. Margo posterior segmentorum trium priorum leviter segmentorum sequentium vix conspicue utrinque incurvus.

Pleopodes primi paris in femina aream opercularem nullam, solum tracheas continentes, inter se valde distantes; in mare area operculari parva ovali instructi.

Telsum in medio leviter coarctatum, paulo latius quam longius, epimera segmenti praecedentis multum superans; pars posterior peltiformis, medio leviter obtuse triangulo producto.

Uropodum scapus nonnihil longior quam latior, ad apicem angustatus; latus exterius curvatum, latus interius late incurvum, apex acutus. Exopoditum mediocre, gracile, multis

partibus longius quam latius, apicem scapi fere attingens. Endopoditum mediocre compressiusculum, telso nonnihil brevius.

Color ater, maculis luteis. Maculæ luteæ plerumque tres in segmento primo, duæ laterales, una media; epimera trunci segmenti tertii et quarti et caudæ epimera segmenti tertii et sæpe sinistrum epimerum segmenti quarti lutea; etiam, rarius, macula lutea in medio trunci segmenti quinti et in epimero sinistro segmenti quarti. Antennæ nigrae, flagellum cum dimidia posteriore parte articuli quinti scapi flavum. Pedes omnes grisei.

Long. 12—13 m. m. Lat. 5,5—6 m. m.

Patria: Burma. The localities in which this species occurred was the district of mount Karen in the heights of 500—1000 m., and the districts of Asciiui Cheba and Ghecu up to heights of 12—1400 m. (L. Fca in Mus. Genova).

37. *Spherillo peltatus*.

Ovalis, minus convexus, sublævis, opacus, minutissime reticulate punctatus.

Oculi majores, globosi, marginem lateralem capitis occupantes; ocelli c. 20, dense congregati.

Antennæ graciles, dimidium corpus longitudine paulum superantes; scapi articulus 4. multo longior quam articulus 2.; flagelli articulus alter priore nonnihil, vix duplo longior.

Epistoma margine superiore frontem non in medio, in lateribus paululum superante, angulis lateralibus obtusis, crassioribus. Linea verticalis marginalis ad marginem anteriorem oculorum ducta, epistoma non attingens. Clypeus lobis magnis, oblongis, triangulis. Tubercula antennaria magna.

Trunci segmentum 1. epimeris tenuibus, leviter revolutis, post integris, subtus plica vel dente minimo procul a margine laterali instructis; anguli anteriores rotundati, anguli posteriores late rotundati; margo posterior utrinque leviter incurvus. Segmentum 2. epimeris integris; pronotum quarta parte dorsi vix longius; margo posterior utrinque

levissime incurvus: etiam in segmentis sequentibus margo posterior utrinque levissime incurvus: epimera segmentorum 2.-3.-4. angusta, triangula.

Caudæ segmenta 3.-4.-5. epimeris valde distantibus, extrorsum versis, processu inferiore parvo.

Telson vix latius quam longius, epimera segmenti præcedentis multum superans, supra convexiusculum, ante medium leviter coarctatum; pars posterior peltiformis, medio triangulo producto acuto.

Uropodum scapus valde obliquus, multo longior quam latior, apice acuto. Exopoditum parvum, gracile, vix quadruplo longius quam latius, angulo superiori lateris interioris scapi insertum, ab apice scapi satis disinens. Endopoditum breve, telso multo brevius.

Color flavus vel albide flavus, punctis et maculis parvis rufis maxime lateralibus pulchre marmoratus.

Long. 9 m. m. Lat. 4,75 m. m.

Patria: Island Seychelle. (Mr. A. Brauer in Mus. Hamburg).

Sectio XII. The few species I have brought together into this group have all some resemblance. They have a more or less distinct split in the hinder corner of the first truncal segment, either the margin of the epimer itself has the split or the split is on the upperside above the margin. The antennæ and also the legs are long and slender. But some species have also affinities to the species of the preceding group, others to the species of the following group, and when more species of *Spherillo* are found an other grouping perhaps shall be more natural.

38. *Spherillo nicobaricus*.

(Tab. VIII fig. 36.)

Armadillo nicobaricus B.-L. Crust. Is. Terr. 31.

Patria: Nicobar Islands; at Pulo Milu (Mus. Kjøbenhavn).

39. *Spherillo testudinalis*.

Armadillo *testudinalis* B.-L. Crust. Is. Terr. 29.

„ *samoensis* B.-L. *ibid.* 30.

? „ *tongensis* B.-L. *Abb. Ak. Berlin.* 1883. — Crust. Is. Terr. 284.

Patria: I think this species will be found spread over the greatest part of the Asiatic and Australian islands. I have seen specimens from Madagascar, Mauritius (Collect. Dollfus), Nicobar, Siam (Mus. Kjøbenhavn), Philippine Islands (Mus. Göttingen), Jaluit (Mus. Berlin), Tonga Isl., Samoa Isl., Ruk and Matupi in Bismarck Isl., Rarotonga in Cooks Isl., Caroline Isl., Marianne Isl. (Mus. Hamburg).

40. *Spherillo maculosus*.

Oblonge ovalis, convexus, opacus, dense et minutissime squamatus.

Oculi magni, maximam partem laterum capitis occupantes; ocelli subdistantes, numero c. 18.

Antennae longiores, tertia parte corporis nonnihil longiores, graciles; scapi articulus 2. paulo brevior quam articulus 4.; flagelli articulus 2. plus duplo vix triplo longior quam articulus 1.

Epistoma convexum, margine superiore fronti adpresso, camque non superante nisi in lateribus paululum. Clypeus lobis brevibus, triangulis.

Trunci segmentum 1. epimeris paulum revolutis, tenuioribus, post supra marginem leviter fassis: lacinia interior brevis, exteriore multo minor. Segmentum 2. epimeris subtus plica anteriore parva obtusa instructis; pronotum magnum, tertiam partem dorsi longitudine explens. Margo posterior segmentorum 1.-2.-3. maxime segmenti 1. utrinque incurvus. Segmenta posteriora nulla duplicatura inferiore munita.

Caudae segmenta 3.-4.-5. epimeris longioribus, nulla duplicatura inferiore, processu inferiore basali minimo. Epimera segmenti 5. paulum divergentia, subparallela.

Telson paululo, vix quarta parte latius quam longius,

ante medium leviter coarctatum, margine postico late rotundato.

Uropodum scapus multo longior quam latior. Exopoditum parvum, tenue, acuminatum, apice setaceum, fossæ superiori, a latere interiore scapi satis distante, oblique insertum. Endopoditum telso nonnihil brevius.

Color brunneus maculis creberrimis pallidis, vel albidus maculis brunneis conspersis; uropodes toti albi.

Long 6,5 m. m. Lat. 3 m. m.

Patria: Seychelle Isl., I have seen but one specimen, taken by Mr. A. Brauer at Mahé (Mus. Hamburg).

41. Spherillo decoratus.

Oblonge ovalis, convexus, lævis, nitidus, minutissime reticulate punctatus.

Oculi magni, maximam partem laterum capitis occupantes, ipsum marginem vix tangentes; ocelli regulariter quadriseriati, numero c. 20.

Antennæ mediocres; scapi articulus 4. vix longior quam articulus 2.; flagelli articulus prior altero triplo brevior.

Epistoma supra medium leviter excavatum, margine superiore frontem vix in medio, in lateribus paululum, superante. Clypeus lobis majoribus, subtriangulis. Linea marginalis verticalis utrinque ante oculos fere ad epistoma producta; area infraocularis angustissima, vix conspicua.

Trunci segmentum 1. epimeris tenuibus, vix marginalis, post levissime et oblique fissis: lacinia interior brevis, rotundata. Segmentum 2. epimeris subtus plica anteriore instructis crassioribus. Margo posterior omnium segmentorum, maxime segmenti 1. et 2., utrinque incurvus; anguli posteriores rotundati. Pronotum segmentorum brevius, quarta parte dorsi vix longius.

Caudæ segmenta 1. et 2. brevissima; segmenta 3.-4.-5. epimeris mediocribus, oblique subrectangulis; epimera segmenti 4. et 5. processu inferiore parvo; epimera segmenti 5. divergentia. Pleopodes primi paris in femina nulla area oper-

culari, solum trachea instructi; area opercularis in mare parva, ovalis subcircula.

Telsum paulo, vix quarta parte latius quam longius, in medio fortiter coarctatum, apice leviter curvato.

Uropodum scapus paulo longior quam latior; latus interius fortius incurvum; apex angustior. Exopoditum mediocre, nonnullis partibus longius quam latius, fossæ superiori scapi, lateri interiori appropinquans, oblique insertum, apicem scapi non attingens. Endopoditum mediocre, telso nonnihil brevius.

Color griseus, maculis albidis maxime lateralibus crebre decoratus.

Long. 6 m. m. Lat. 3 m. m.

Patria: Siam. Few specimens were taken in rotten wood and under stones in the little islands »Koh-Kahdat« and »Koh-Chang«. (Dr. Th. Mortensen in Mus. Kjobenhavn).

42. *Spherillo boholensis*.

Oblonge ovalis, subconvexus, subnitidus, minute et dense squamatus.

Oculi magni, marginem capitis vix tangentés; ocelli quadriseriati, numero c. 20.

Antennæ longæ, dimidium corporis paulum superantes; scapi articulus 2. nonnihil brevior quam articulus 4.; flagellum longum, duas tertias partes scapi articuli 5. subæquans; articulus prior altero triplo brevior.

Epistoma margine superiore medio subreflexo nisi in angulis externis frontem non superans. Clypeus lobis medioeribus, rotundatis. Linea marginalis verticalis utrinque ante oculos producta, marginem superiorem epistomatis fere attingens, nullam aream infraocularem formans.

Trunci segmentum primum epimeris tenuibus, supra leviter marginatis, post levissime, oblique fissis: lacinia interior exteriore multo minor. Segmentum 2. epimeris leviter fissis: lacinia interior brevis, angusta, subrectangula. Margo posterior segmenti 1. utrinque leviter incurvus, angulis externis late rotundatis; margo posterior segmenti 2.

utrinque levissime incurvus; margo posterior segmentorum sequentium subrectus. Pronotum segmentorum magnum, tertia parte dorsi paululo longior. Pedes longiores, graciles.

Caudæ segmenta duo priora mediocria; epimera segmentorum 3.-4.-5 mediocria, subrectangula, nullo processu inferiore munita; epimera segmenti 5. paulum divergentia. Pleopodes primi paris in femina nulla area operculari solum trachea instructi.

Telsum breve, tertia parte latius quam longius, in medio leviter coaretatum, apice curvato.

Uropodum scapus paulo longior quam lator, latus inferius leviter incurvum, apex latus. Exopoditum minutum, vix duplo longius quam latius, lateri interiori scapi supra insertum; endopoditum mediocre, telso nonnihil brevius.

Color subuniformis, griseus, in lateribus pallidior.

Long 6 m. m. Lat. 2,5 m. m.

Patria: Philippine Islands: Bohol (Prof. Semper in Mus. Göttingen).

43. *Spherillo griseus*.

Spherillo griseus B.-L. Proc. zool. soc. Lond. 1902. 380.

Oblonge ovalis, convexus, subnitidus, minute et minus dense squamatus.

Oculi magni, maximam partem capitis laterum occupantes, ipsum marginem vix tangentes; ocelli irregulariter quadriseriati, numero circiter 20.

Antennæ longiores, graciles, fere duas partes corporis longitudine æquantes; scapi articulus 4. nonnihil longior quam articulus 2.; flagelli articulus prior altero triplo brevior.

Epistoma convexus, supra reflexum, margine superiore frontem non in medio in lateribus ad angulos externos paulum superante. Clypeus fornicatus, lobis lateralibus brevibus, rotundate triangulis. Tubercula antennaria magna, intus subdentiformiter producta. Linea verticalis marginalis tenuis, utrinque ante oculos ad epistomatis marginem superiorem producta; area infraocularis angustissima.

Trunci segmentum 1. epimeris tenuibus, leviter marginatis, post levissime et oblique fissis: lacinia interior brevis

rotundata. Segmentum 2. epimeris levissime fissis: lacinia interior brevissima. Margo posterior omnium segmentorum utrinque leviter incurvus, in segmento primo fortius. Pro-notum segmentorum magnum, tertia parte dorsi fere longius.

Caudæ segmenta 3.-4.-5. epimeris mediocribus, oblique rectangulis, processu inferiore nullo; epimera segmenti 5. divergentia. Pleopodes primi paris in femina nullam aream opercularem solum tracheam perparvam continent.

Telsum tertia parte fere latius quam longius, in medio levissime coarctatum, apice subrecto vel levissime curvato.

Uropodes: Scapus paulo longior quam latior; latus interior subrectum ad basin subangulate incurvum; apex latior. Exopoditum minutum, vix duplo longius quam latius, fossæ lateris interioris scapi procul ab apice insertum. Endopoditum longius, apicem telsi attingens.

Color griseus, maculis obscurioribus.

Long. 5,5 m. m. Lat. 2,5 m. m.

Patria: Malayan peninsula. At Aring in Kelantan were several specimens taken the $^{22}/_8$ 1899 by Mr. R. Evans. (Mus. London).

44. *Spherillo brachycephalus*.

Ovalis, sublævis, opacus, minutissime et densissime squamate punctatus.

Oculi majores, maximam partem laterum capitis occupantes; ocelli numero c. 16, inter se subdistantes.

Antennæ longiores et graciliores, dimidio corpore nonnihil, ($^{4}/_9$), breviores; scapi articulus 2. et 4. subæque longi, 5. perlongus; flagelli articulus prior altero duplo brevior, articulus 2. seta apicali longa.

Caput breve et latum. Epistoma margine superiore nisi in angulis externis frontem non superans. Clypeus brevis, fornicatus, lobis lateralibus majoribus, oblique triangulis. Tubercula antennaria magna, intus dente magno, triangulo, prominente. Linea verticalis marginalis utrinque ad oculorum latera producta, aream infraocularem perangustam formans.

Trunci segmentum 1. epimeris tenuioribus, supra marginatis, post leviter et oblique fissis: lacinia interior exteriore paulo brevior, late rotundata. Segmentum 2. epimeris ante crassioribus, integris. Epimera segmentorum sequentium subtus duplicatura anteriore leviore. Margo posterior omnium segmentorum, maxime primi, utrinque incurvus. Pronotum tertiam partem segmenti 2. dorsi subæquans. Pedes omnes longiusculi, graciles.

Caudæ segmentum primum occultum; epimera segmentorum 3.-4.-5. latiora, subrectangula, nullo processu inferiore munita; epimera segmenti 5. paulum divergentia. Pleopodes primi paris in femina nulla area operculari solum trachea instructi.

Telsum breve, tertia parte vel plus latius quam longius, in medio leviter coarctatum, apice leviter curvato.

Uropodum scapus vix longior quam lator, latere interiore leviter incurvo. Exopoditum mediocre, fossæ superiori scapi, satis longe a margine interiore et ab apice oblique insertum. Endopoditum mediocre, telso nonnihil brevius.

Color fuscus, maculis subnigris crebris infectus.

Long. 9,5 m. m. Lat. 5 m. m.

Patria: Borneo at Pagat (Mr. Grabowski in Mus. Berlin).

45. Spherillo obliquipes.

Oblonge ovalis, convexus, opacus, dense et minute squamatus.

Oculi magni, marginem lateralem capitis non attingentes; ocelli numero c. 20, in series quaternas dispositi.

Antennæ dimidium corpus subæquantes; scapi articulus 2. paulo longior quam articulus 3., multo brevior quam articulus 4.; flagellum scapi articulo 5. fere triplo brevius, flagelli articulus prior altero duplo vel plus brevior.

Epistoma convexiusculum, in medio supra reflexum, margine superiore frontem in lateribus paulum, in medio non superante. Tubercula antennaria magna, prominentia. Clypeus lobis lateralibus magnis, extra versis, subtriangulis.

Trunci segmentum 1. epimeris tenuibus, subtus carina inferiore longitudinali a margine satis distante in plicam parvam desinente munitis; margo posterior utrinque fortius incurvus; anguli priores epimeri acutiores, anguli posteriores retroducti, acutiores. Epimera segmenti 2. infra lamina brevi, obtusa; epimera segmentorum 3.-4.-5.-6.-7. duplicatura inferiore, anteriore, oblique triangula, parva.

Caudæ segmentum 1. fere occultum: epimera segmentorum 3.-4.-5. subdistantia, oblique rectangula, processu inferiore parvo; epimera segmenti 3. duplicatura inferiore magna, oblique tetragona. Pleopodes primi paris feminae nullam aream opercularem continent; tracheæ duorum priorum parium majores, posteriorum parium parvæ.

Telson paulo, circiter quinta parte, latius quam longius, in medio levissime coarctatum; basis et apex æque longa, margo posterior leviter curvatus.

Uropodum scapus latus, tamen manifesto longior quam latior; latus interius fortiter incurvum. Exopoditum mediocre, fossæ superiori fere in medio scapi, procul ab apice oblique insertum, latus interius scapi apice suo fere attingens. Endopoditum mediocre, telso nonnihil brevius.

Color griseus, disperse albide maculatus.

Long. 8. m. m. Lat. 3,5 m. m.

Patria: Philippine Islands, in the island Bohol (Prof. Semper in Mus. Göttingen).

46. *Spherillo ruficornis*.

Armadillo ruficornis B.-L. Crust. Is. Terr. 283.

Patria: New Caledonia at Noumea (Mr. Savés in Coll. E. Simon).

Remarks. I am not sure of the place of this species. In my description l. c. p. 283 I state that the split hinder corner of the first truncal segment has the »parte exteriore majore«, but according to a drawing I have made at that time it seems that the exterior lobe is the smallest.

Here perhaps the following species can be placed:

47. *Spherillo rectifrons*.

Armadillo rectifrons Dollf. in Weber, Reise Niederl. O.-Ind. IV. 361. Tb. 13. f. 4.

Patria: Celebes.

Sectio XIII. To this group belong all the species of *Spherillo*, which have the epimera of the first truncal segment thick and more or less evidently sulcate at the margin, exceptions are but *S. sollers*, *S. Macmahoni*, *S. hawaiiensis*, *S. grossus* building proportionately the sections II—V; also the hinder margin of the first segment is straight in almost all species. All the species seem to be mutually related, only *S. lentus* takes a separate place.

Conspectus specierum.

- a. Epistoma margine superiore delecto.
Spherillo lentus.
- aa. Epistoma margine superiore manifesto.
 - b. Trunci segmentum 1. epimeris post inæqualiter fissis: lacinia interior major.
Spherillo montivagus. — *Spherillo setaceus*.
 - bb. Trunci segmentum 1. epimeris post æqualiter vel subæqualiter fissis, (lacinia interior minor).
 - c. Trunci segmentum 1. margine laterali per totam longitudinem profunde sulcato.
Spherillo nobilis.
 - cc. Trunci segmentum 1. margine laterali saltem ante minus manifesto sulcato.
 - d. Trunci segmenta 5.-6.-7. in epimeris duplicatura inferiore, sæpe etiam caudæ segmentum 3. duplicatura instructum.
Spherillo parvus. — *Spherillo ingens*. — *Spherillo caligans*.
 - dd. Trunci segmenta 5.-6.-7. nulla duplicatura.
Spherillo obscurus. — *Spherillo misellus**) — *Spherillo brevis**)).

*) I am not completely sure of the exactness of the last character because when I examined the two species many years ago I did not pay particular attention to this character; also I am uncertain with regard to the relations of the pleopods in these two species.

48. *Spherillo lentus*.

(Tab. VIII fig. 37—39).

Superficies obscura, dense et minute squamata.

Oculi majores, globosi, paulum prominentes, ad angulos anticos capitis positi; ocelli numero c. 20.

Antennæ breviores et crassiores, tertiam corporis partem vix superantes; scapi articuli 2. et 4. subæque longi; flagelli articulus alter priore nonnullis partibus longior.

Epistoma margine superiore minus manifesto, impressione media subabbreviato; frons ante inter oculos transverse tumida, a margine epistomatis sulco discreta. Linea verticalis capitis post duplex, aream infraocularem angustam limitans, ad latera oculorum ducta. Clypeus brevis, supra leviter marginatus; lobi laterales mediocres vel minores, rotundati.

Trunci segmentum 1. epimeris percrassis, alticinctis, margine laterali per totam longitudinem minus manifesto sulcato, post leviter et subæqualiter fisso: lacinia interior oblique dentiformis; margo posterior transversus, vix conspicue utrinque incurvus. Segmenti 2. epimera processu inferiore dentiformi instructa; pronotum quinta parte dorsi vix longius. Segmentorum 5.-6.-7. epimera infra duplicatura lunata anteriore minore.

Caudæ segmenta 3.-4.-5. epimeris processu inferiore basali parvo instructis; segmentum 3. etiam duplicatura inferiore obliqua. Pleopodes primi paris et in femina et in mare area operculari perparva, vix conspicua muniti.

Telsonum tertia parte vel plus latius quam longius, in medio fortiter coarctatum, margine postico late rotundato.

Uropodum scapus vix longior quam latior, post angustatus. Exopoditum minutissimum, lateri superiori scapi, margini interiori appropinquans, procul ab apice insertum. Endopoditum telso nonnihil brevius.

Subunicolor, obscure griseo-brunneus, ad latera paulo dilutior.

Long. 9—10 m. m. Lat. 4—5 m. m.

Patria: British New Guinea. (Mr. L. Loria. 1894 in Mus. Genova).

49. *Spherillo montivagus*.

(Tab. VIII fig. 40—42).

Armadillo montivagus B.-L. Crust. Is. Terr. 35.

Patria: Australia. Several specimens have been taken in some of the Australian Islands: Upolu (Mus. Kjobenhavn); Samoa; Ninafoon, 3 specimens from the intestines of *Megapodius Prellchari* (Dr. Hübner in Mus. Hamburg); Ruk (Mus. Hamburg).

50. *Spherillo setaceus*.

Tota superficies dense et minute punctata, punctis squamiferis vel setis minutissimis obtecta.

Oculi minores; ocelli subconcreti, numero circiter 11—12.

Antennæ tertiam corporis partem paulum superantes; scapi articulus 2. non brevior quam articulus 4.; flagelli articulus 1. altero triplo brevior.

Epistoma convexiusculum, margine superiore frontem paulum superante. Caput post lineam frontalem marginalem utrinque transverse rugosum; linea marginalis verticalis utrinque ad oculorum marginem anteriorem producta. epistoma non attingens. Clypeus brevis, lobis minoribus, oblique rotundatis.

Trunci segmentum 1. margine laterali crasso, per totam longitudinem leviter sulcato, post profunde et inæqualiter fisso: lacinia interior exteriore multo longior. Epimerum segmenti 2. plica parva inferiore munitum; epimera segmentorum 3.-4.-5.-6.-7. perbrevia et maxime posteriora perlata. Margo posterior segmentorum priorum rectus. Pleopodes primi paris in femina nulla area operculari muniti.

Telsum breve, tertia parte latius quam longius, supra in medio convexum, apice leviter curvato et manifesto marginato.

Uropodium scapus paulo longior quam latior; exopoditum minutissimum, punctiforme, foveæ oblongæ lateris interioris scapi, procul ab apice insertum; endopoditum medio cre, telso paulo brevius.

Unicolor, griseus (?).

Long. 8 m. m.

Patria: Auckland, one specimen. (Dr. B. Friedländer in Mus. Berlin).

51. *Spherillo nobilis*.

(Tab. IX fig. 1—2).

Superficies sublævis, nitida, reticulate squamate punctata.

Oculi minores; ocelli numero c. 12—13, interiores perparvi.

Antennæ tertiam corporis partem longitudine superantes; scapi articuli 2. et 4. subæque longi; flagelli articulus alter priore duplo vel plus longior.

Epistoma supra paulum reflexum, margine superiore frontem in medio non, in lateribus paululum superante; linea verticalis marginalis ad marginem anteriorem oculorum utrinque producta, epistoma non attingens. Clypeus brevis, fornicatus, lobis parvis rotundate subsemicirculis.

Trunci segmentum 1. epimeris alticinctis, margine laterali crasso, per totam longitudinem minus manifesto sulcato, post paulum inæqualiter fisso: lacinia interior paulo minor; margo posterior utrinque leviter incurvus. Segmenti 2. epimerum processu inferiore ovali, subdentiformi, retroducto instructum; pronotum vix sexta parte dorsi longius; epimera segmentorum 5.-6.-7 crassiora, ad marginem tenuiora.

Caudæ segmenta 3.-4.-5. epimeris crassioribus. Pleopus primi paris in femina solum tracheam continens.

Telsum breve, tertia parte latius quam longius, supra convexiusculum, basi utrinque leviter impressa, margine posteriore leviter curvato.

Uropodum scapus vix longior quam latior, ad apicem leviter angustatus. Exopoditum minutissimum, supra procul a margine interiore et ab apice insertum; endopoditum medioere, telso paulo brevius.

Color e fusco brunneus, crebro flavo-maculatus, maxime in trunci segmentis singulis macula magna transverse ovali.

Long. c. 12 m. m. Lat. c. 6 m. m.

Patria: Riu-Kiu Islands: Ohosima (Mus. Hamburg).

52. *Spherillo parvus*.

Armadillo parvus B.-L. Crust. Is. Terr. 25.

" " Dolf. Bul. Soc. Zool. Fr. XVIII. 187.

Patria: Seychelle Islands (Mus. Kiel). Madagascar.
Mauritius. (Mus. Dollfus).

53. *Spherillo ingens*.

(Tab. IX fig. 4-7).

Ovalis vel oblonge ovalis, convexus, opacus, minutissime et densissime squamate punctatus.

Oculi majores; ocelli subdistantes, numero c. 19.

Antennae tertiae corporis parte vix longiores; scapi articulus 2. et 4. subaeque longi; flagellum breve, articulus 1. duplo vel plus brevior quam articulus 2.

Epistoma supra maxime in medio reflexum, margine superiore frontem nonnihil superante. Linea marginalis verticalis capitis utrinque producta, epistoma tamen non attingens. Clypeus brevis, fornicatus, lobis lateralibus majoribus, oblonge ovalibus.

Trunci segmentum 1. epimeris alticinctis, margine laterali percrasso, minus manifesto per longitudinem sulcato, post subaequaliter fisso; lacinia exterior interiore vix major; margo posterior subrectus; epimerum segmenti 2. processu interiore parvo, dentiformi, apice subprocurvo; epimera segmentorum 5.-6.-7. infra duplicatura anteriore, obliqua, minore.

Caudae segmenta 3.-4.-5. epimeris processu inferiore inflexo instructis. Pleopus primi paris in femina nulla area operculari modo trachea munitus.

Telsum fere quarta parte latius quam longius, in medio fortiter coarctatum, margine postico leviter curvatum.

Uropodum scapus multo longior quam latior, post in tetragonum, ad apicem vix angustius, productus. Exopoditum minutissimum, supra procul ab apice et satis longe a margine interiore scapi positum; endopoditum mediocre nonnihil brevius quam telsum.

Color flavus vel lividus, in marginibus posterioribus segmentorum sordide obscurior.

Long. 17. m. m. Lat. 8 m. m.

Patria: Philippine Islands, one female specimen from Bohol island. (Prof. Semper in Mus. Göttingen).

54. *Spherillo caligans*.

Sublævis, opacus, minutissime squamatus, vix punctatus.

Oculi parvi; ocelli pauci, numero e. 6, irregulariter positi, vix pigmentati.

Antennæ tertia corporis parte paululo longiores; articulus 2. et 4. subæque longi, vel 4. paululo longior quam 2.; flagelli articulus 1. duplo vel fere triplo brevior quam articulus 2.

Epistoma linea transversa bisinuata per medium ducta in areas duas divisum: pars superior reflexa, linea marginali tenui a fronte discreta. Clypeus perbrevis, fornicatus, lobis lateralibus mediocribus, rotundate subsemicirculis.

Trunci segmentum 1. margine laterali crasso, ante subdeleto post profunde sulcato et æqualiter fisso; margo posterior subrectus, utrinque levissime, vix conspicue incurvus; epimerum segmenti 2. processu inferiore ovali, latiore; epimera segmentorum 5.-6.-7. duplicatura inferiore minore obliqua.

Caudæ segmentum 3. in epimero duplicatura inferiore minore. Pleopus primi paris in femina area operculari nulla modo trachea instructus.

Telson paulo, quarta parte, latius quam longius, in medio leviter coarctatum, margine postico leviter curvato.

Uropodum scapus paulo longior quam lator, ad apicem angustatus. Exopoditum minutum supra procul a margine interiore et perlonge ab apice scapi insertum; endopoditum mediocre, telso paulo brevius.

Subunicolor, pallide griseus.

Long. 5 m. m. Lat. 2,3 m. m.

Patria: Philippine Islands: Bohol, 2 specimens. (Prof. Semper in Mus. Göttingen).

55. *Spherillo obscurus*.

(Tab. IX fig. 3).

Armadillo obscurus B.-L. Crust. Is. Terr. 285.

Patria: Japan Islands: At Yokohama (Prof. v. Martens), at Uweno Park, $\frac{9}{3}$ 73 several specimens (Dr. Hilgendorf), (Mus. Berlin); at Moji, $\frac{15}{5}$ 1900, (Dr. R. Mull in Mus. Hamburg).

56. *Spherillo misellus*.

Armadillo misellus B.-L. Crust. Is. Terr. 285.

Patria: Tasmania. (Scheyer in Mus. Berlin).

57. *Spherillo brevis*.

Epistoma convexiusculum, margine superiore arcuato frontem vix superante. *Clypeus lobis brevibus*.

Trunci segmentum 1. margine laterali crassiore, paulum revoluto, per longitudinem leviter sulcato, post inæqualiter fissio: lacinia interior paulo brevior quam exterior; epimera segmenti 2. processu interiore brevi.

Telsum latius quam longius, lateribus leviter incurvis, in medio vix coarctatum, in margine postico rectum, supra per longitudinem leviter carinatum.

Uropodum scapus paulo longior quam latior. Exopoditum minimum, fossæ superiori prope marginem interiorum scapi insertum, apice setaceum.

Long. c. 5,5 m. m. Lat. 2,5 m. m.

Patria: Auckland. (Mus. Dresden).

Remarks. I have seen only one specimen of each of the two last species many years ago, and the condition of them was not good, I therefore could not pay regard to the more essential characters, and their place here is, not sure.

To this section the following species, unknown to me, seem to belong. According to the descriptions of the different authors they seem to have the first truncal segment with thick epimers and straight hinder margin, they have also a very little exopodit, which always seem to be placed in the upper-side of the scapus at some distance from the inner margin.

58. *Spherillo melanurus*.

Armadillo melanurus Dollf. Bul. soc. étud. sc. IX. 1887.

Patria: New Caledonia at Nouméa.

59. *Spherillo floresianus*.

Armadillo floresianus Dollf. in Weber, Reise Niederl. O.-Ind. IV. 361. Tb. 13. f. 5.

Patria: Flores.

60. *Spherillo velutinus*.

Armadillo velutinus Dollf. in Weber, Reise Niederl. O.-Ind. IV. 363. Tb. 13. f. 7.

Patria: Sumatra, Celebes.

61. *Spherillo coecus*.

Armadillo coecus Dollf. in Weber, Reise Niederl. O.-Ind. IV. 362. Tb. 13. f. 6.

Patria: Java.

62. *Spherillo Weberi*.

Armadillo Weberi Dollf. in Weber, Reise Niederl. O.-Ind. IV. 364. Tb. 13. f. 8.

Patria: Sumatra.

63. *Spherillo brevicauda*.

Armadillo brevicauda Dollf. in Weber, Reise Niederl. O.-Ind. IV. 364. Tb. 13. f. 9.

Patria: Flores.

64. *Spherillo Danæ*.

Spherillo Danæ Heller, Reise Novara. 134. Tb. 12. f. 4.

Armadillo inconspicuus Miers, Ann. Nat. Hist. s. 4. XVII. 225.

„ *Danæ* Chilton, Tr. Lin. soc. Lond. 1901. 145.

Patria: Auckland (Novara Exp.), (Mr. L. Hames s. Chilton); New Zealand (Mus. London s. Miers); »L'île du Nord«.

»Elle devient moins en moins abondante vers le sud, rare sur l'île Stewart« (Filhol p. 439)*).

Remarks. I think Mr. Chilton is in the right in having united *S. Danae* and *S. inconspicuus*.

65. *Spherillo pictus*.

Spherillo pictus Heller, Reise Novara, 136.

Patria: Taïti Island.

*) Filhol: Mission de l'île Campbell. Rec. Mém. Acad. sc. 1885 (Venus) III.

3. ARMADILLO.

Although the genus *Armadillo*, as I here have founded it, is essentially different from the genus *Spherillo*, I shall, however, treat it in this place, because I have had opportunity to examine so large a number of species belonging to the genus *Armadillo* and because the species of this genus have so great a resemblance to the species of the genus *Spherillo*, that it always will be useful and often necessary to compare the species of the one genus with species of the other. All the numerous species here enumerated of *Spherillo* and *Armadillo* have also by all other authors been collected within the *Armadillidæ*.

The common characters for the genus *Armadillo* and for the group or subfamily »*Oniscinæ*«, given below must be fully explained in an other place in connection with the other genera belonging to this subfamily.

Mandibularum lacinia mobilis appendice prima brevi, apice dentata.

Maxillæ prioris paris endopoditum penicillis ambobus longis, gracilibus.

Oculi plerumque nonnihil intra marginem lateralem capitis positi.

Conspectus sectionum specierum.

- a. Margo posterior segmenti 1. trunci rectus.
 Pronotum brevissimum.
 Sectio I. Typus: *Armadillo officinalis* Dum. species 1—10.
- aa. Margo posterior segmenti 1. trunci utrinque plus minusve incurvus.
 b. Pronotum segmentorum trunci breve vel perbreve, in segmento 2. ne septimam quidem partem dorsi longitudine superans.
 c. Antennæ plerumque breviores; scapi articuli 2. et 4. subæque longi vel articulus 2. paulo longior, articulus 3. semper minutus.
 d. Trunci segmentum 1. margine laterali post fissio.
- Sectio II. Typus: *Armadillo clausus* B.-L. species 11—50.
 dd. Trunci segmentum 1. margine laterali post integro.
- Sectio III. Typus: *Armadillo microps* B.-L. species 51.
- Sectio IV. Typus: *Armadillo aculeatus* B.-L. species 52.
 cc. Antennæ perbreves; scapi articuli 2.-3.-4. subæque longi vel 4. minimus.
- Sectio V. Typus: *Armadillo Fex* B.-L. species 53—55.
 bb. Pronotum segmentorum trunci longius, quintam vel in segmentis posterioribus fere quartam partem dorsi longitudine ex-
 plens.
 c. Epistoma fronti concretum; linea marginalis capitis utrinque ad marginem superiorem epistomatis continua ducta.
- Sectio VI. Typus: *Armadillo murinus* Br. species 56—75.
 cc. Epistoma a fronte sulco profundo, in medio sæpe occulto, discretum; linea marginalis capitis utrinque ante epistoma desinens.
- Sectio VII. Typus: *Armadillo nigrinus* B.-L. species 76—90.

Sectio I. (*Armadillo* Br., *Pentheus* C. Koch, *Orthonus Miers*). All the species of this section are mutually very alike. I have before*) given a review over the species of this group at that time known, here only I take *Armadillo hirsutus* Koch out.

All the species hereto belonging are of all the Armadillones the most able to conglobation; the hindermost segments of the body are during the conglobation fitted with

*) G. Budde-Lund: Landisopoden aus Griechenland. (Arch. Naturg. XXV. 1896. p. 39).

their margins in the deep furrow in the first segment of the truncus and of the epistoma, most accurately. Also the split hind corner of the first segment of the truncus encloses exactly the even split epimer of the second segment.

The articular face of the segments, pronotum, is very short, almost linear. In all the examined species has the first pair of pleopods in the female most often a well developed area opercularis; the uropods with their appendices are extremely short and minute.

Here I record the following species:

- a. *Epistoma supra sulco transverso deletiore.*
Segmentum primum trunci sulco marginali angustiore, ante minus profundo et leviter curvato.
- b. *Superficies laevis, nitida, punctatissima.*

1. *Armadillo officinalis.*

(Tab. IX fig. 8—16).

Armadillo officinalis Dum. — B.-L. Crust. Is. Terr. 16.

Patria: South Europe, Asia minor, North Africa.

2. *Armadillo erythroleucus.*

Arm. officinali statura et habitu persimilis, indicibus sequentibus maxime differt:

Sulcus transversus epistomatis subdeletus.

Lamina interior epimeri segmenti primi trunci major; lamina interior epimeri segmenti secundi minus crassa.

Telsum supra in medio basis fovea perparva, oblonga.

Uropodum scapus longior; exopoditum ab apice scapi magis remotum.

Color albide rufescens.

Patria: Crimea. (Mus. Varszava).

- bb. *Superficies opaca, minutissime et densissime squamata.*
- c. *Lacinia interior segmenti primi trunci manifesto longior quam lacinia exterior.*

3. *Armadillo Mayeti.*

Armadillo Mayeti Simon, Expl. se. Tunis, Crust. p. 7. — B.-L. Arch. Naturg. XXV. 43. — Dollf. Mém. Soc. zool. Fr. IX. 528.

Patria: Tunis, at Sfax and Djebel Oum-Ali.

- cc. Lacinia interior segmenti primi trunci paululo major quam lacinia exterior.

4. *Armadillo albomarginatus*.

(Tab. IX fig. 21).

Armadillo albomarginatus Dollf. Rev. biol. Nord. Fr. IV. 3. —
B.-L. Arch. Naturg. XXV. 43.

Patria: Palestine.

- aa. Epistoma supra sulco transverso profundo.
Segmentum primum trunci sulco marginali per totam longitudinem profundo et lato et fortiter curvato.
- b. Telsum margine postico leviter curvato uropodes superans.

5. *Armadillo cinctus*.

(Tab. IX fig. 17—20).

Armadillo cinctus B.-L. Arch. Naturg. XXV. 41.

Patria: The Greek islands: Kaso, Armathia, Karpatho.

- bb. Telsum margine postico recto uropodes non superans.
- c. Superficies scaberrime tuberculata.

6. *Armadillo tuberculatus*.

Armadillo tuberculatus C. v. Vogl, Verh. Ges. Wien. XXV. 501.
— B.-L. Arch. Naturg. XXV. 43.

Patria: The Greek islands: Tinos, Andros.

- cc. Superficies delete tuberculata.

7. *Armadillo piger*.

Armadillo piger B.-L. Arch. Naturg. XXV. 42.

Patria: Kreta.

- ccc. Superficies minutissime et densissime squamata.

8. *Armadillo montanus*.

Superficies minutissime et densissime squamata.

Oculi minores; ocelli dense congregati, numero c.
10—11.

Sulcus transversus epistomatis satis manifestus, leviter curvatus.

Trunci segmentum 1. epimeris post subæqualiter fassis, vel lacinia interiore paululo majore quam exterior.

Telson breve, duplo vel plus latius quam longius; apex post coarctionem brevissimus, margine postico subrecto vel levissime curvato.

Uropodium scapus paulo longior quam latior; exopoditum vix conspicuum, microscopicum; endopoditum breve, deplanatum.

Subunicolor, griseus, in capite et trunci segmentis utrinque striis pallidis ornatus; margines posteriores et laterales omnium segmentorum subperlucidi; antennæ et pedes flava, illæ fuscomaculatæ.

Long. 7—8 m. m. Lat. 4 m. m.

Patria: Tripoli, at Djebel Tarchuna (Mr. G. Rohlfs in Mus. Berlin).

9. *Armadillo Ausselii*.

(Tab. IX fig. 22).

Armadillo Ausselii Dollf. Mém. soc. zool. Fr. VI. 48.

Patria: The Canary Islands: Palma, Tenerifa.

Remarks. This species seems to take in a little isolated place.

10. *Armadillo orbicularis*.

Armadillo orbicularis B.-L. Crust. Is. Terr. 23. — Dollf. Mém. soc. zool. Fr. VIII. 345.

Patria: Cape Colony.

Remarks. I have some doubt that this species can be registered in this section. I have for some years ago (1884) had only one specimen for examining, and it was very defective, and my notices and drawings belonging to this species give but insufficient help to determination. Renewed examinations shall perhaps give it a place in the following section.

Sectio II. (*Cubaris* Br. e. p. — *Diplocochus* Br. e. p.).
I have before treated a number of species belonging to

this section*), and I have at that time demonstrated in what manner the two lamels, formed of the split hind corner of the first truncal segment, gripe in the space between the two lamels of the split epimer of the second truncal segment.

The articular face (pronotum) of the segments in the largest part of the species is also very short, linear, ordinarily but a twentieth part to a tenth part of the length of the back of each segment; in some species the pronotum is, however, a little longer particularly in the hinder segments of the truncus; for instance the Armadillo hirsutus Koch, which I place in this group, is in this manner distinguished from the species of the preceding section. An exact research with regard to this character in all the species will probably give good results. The appendices of the uropods mostly the exopodit are always very small.

The species after my opinion belonging to this section I have set in order after their affinity as much as it has been possible after the often very imperfect descriptions of the various authors. Furthermore I give a survey of the chief characters and the classification of the species in consequence of them, thinking it will be useful for later finding out the systematic relations between the numerous species belonging to this group.

Conspectus morphologicus specierum hujus sectionis.

1. Epistoma margine superiore frontem multum superante.
11. *echinatus*; 21. *rubropunctatus*; 22. *clausus*; 23. *similis*; 25. *glomus*; 26. *gigas*?; 27. *galapagoensis*?; 44. *pubescens*.
- 1 a. Epistoma margine superiore frontem nonnihil superante.
14. *verrucosus*; 16. *silvarum*; 18. *pumilus*; 20. *scalerrimus*; 28. *congener*; 30. *tuberosus*; 31. *pisum*; 32. *Dugesii*; 33. *grenadensis*; 43. *viticola*?; 46. *perlatus*?; 47. *trifolium*; 49. *nitidus*?

*) G. Budde-Lund: Landisopoder fra Venezuela (Ent. Medd. 1893, p. 111).

1 b. Epistoma margine superiore frontem non vel paululum maxime in lateribus superante.

12. *venustus*; 13. *truncorum*; 15. *crassus*; 17. *zigzac?*; 19. *nigrorufus*; 24. *multipunctatus*; 29. *canariensis*; 34. *vincentis?*; 35. *dumorum*; 36. *flavescens*; 37. *festivus*; 38. *mixtus*; 39. *oraniensis*; 40. *nigricans*; 41. *lilipitanus*; 42. *sodalis*; 45. *hirsutus*;

2. Antennarum scapi articulus 2. longior quam 4.

16. *silvarum?*; 18. *pumilus*; 19. *nigrorufus*; 22. *clausus*; 23. *similis*; 25. *glomus*; 30. *tuberosus*;

2 a. Antennarum scapi articuli 2. et 4. subæque longi.

11. *echinatus*; 12. *venustus*; 13. *truncorum*; 14. *verrucosus*; 15. *crassus*; 27. *galapagoensis?*; 28. *congener*; 29. *canariensis*; 31. *pisum*; 32. *Dugesii*; 33. *grenadensis*; 34. *vincentis?*; 35. *dumorum?*; 36. *flavescens*; 37. *festivus*; 40. *nigricans*; 41. *lilipitanus*; 43. *viticola?*; 45. *hirsutus*.

2 b. Antennarum scapi articulus 2. brevior quam 4.

20. *scaberrimus*; 17. *zigzac?*; 46. *perlatus?*

3. Trunci segmentum 1. margine laterali per totam longitudinem sulcato, post fisso.

11. *echinatus*; 12. *venustus*; 16. *silvarum*; 17. *zigzac*; 18. *pumilus*; 20. *scaberrimus*; 21. *rubropunctatus*; 24. *multipunctatus*; 27. *galapagoensis?*; 28. *congener*; 29. *canariensis*; 38. *mixtus*; 45. *hirsutus*; 46. *perlatus*.

3 a. Trunci segmentum 1. margine laterali ante integro, per posteriorem partem levius sulcato, post fisso.

14. *verrucosus*; 19. *nigrorufus*; 22. *clausus*; 23. *similis*; 25. *glomus*; 26. *gigas*; 30. *tuberosus*; 33. *grenadensis*; 37. *festivus*; 40. *nigricans*; 41. *lilipitanus*; 47. *trifolium*.

3 b. Trunci segmentum 1. margine laterali vix vel non sulcato, post fisso.

13. *truncorum*; 15. *crassus*; 31. *pisum*; 32. *Dugesii*; 34. *vincentis*; 35. *dumorum*; 36. *flavescens*; 39. *oraniensis*; 42. *sodalis*; 43. *viticola*; 44. *pubescens*; 48. *affinis?*

4. Pronotum segmenti 2. perbreve, lineare, $\frac{1}{20}$ dorsi vix longius.

14. *verrucosus*; 22. *clausus*; 25. *glomus*.

4 a. Pronotum segmenti 2. perbreve, $\frac{1}{12}$ — $\frac{1}{10}$ dorsi vix longius.

11. *echinatus*; 12. *venustus*; 18. *pumilus*; 19. *nigrorufus*; 28. *congener*; 29. *canariensis*; 36. *flavescens*; 37. *festivus*; 38. *mixtus*; 39. *oraniensis*; 40. *nigricans*.

4 b. Pronotum segmenti 2 breve, tamen $\frac{1}{8}$ — $\frac{1}{7}$ dorsi vix brevius.

13. *truncorum*; 15. *crassus*; 16. *silvarum?*; 17. *zigzac?*; 31. *pisum*; 32. *Dugesii*; 33. *grenadensis*; 45. *hirsutus*; 46. *perlatus?*

5. Pleopus primi paris in femina area operculari nulla vel nulla fere.
 11. *echinatus*; 12. *venustus*; 13. *truncorum*; 14. *verrucosus*; 15. *crassus*; 16. *silvarum*?; 17. *zigzac*?
- 5 a. Pleopus primi paris in femina area operculari satis magna.
 18. *pumilus*; 19. *nigrorufus*; 21. *rubropunctatus*?; 22. *clausus*?; 25. *glomus*; 28. *congener*; 29. *canariensis*; 31. *pisum*; 32. *Dugesii*; 36. *flavescens*; 37. *festivus*; 38. *mixtus*; 40. *nigricans*.
6. Telsum ejusdem fere longitudinis atque latitudinis.
 26. *gigas*?; 34. *vincentis*; 36. *flavescens*; 39. *oraniensis*; 41. *liliputanus*; 42. *sodalis*; 43. *viticola*; 45. *hirsutus*; 46. *perlatus*.
- 6 a. Telsum paulo latius quam longius.
 11. *echinatus*; 12. *venustus*; 13. *truncorum*; 16. *silvarum*; 17. *zigzac*; 18. *pumilus*; 19. *nigrorufus*; 20. *scaberrimus*; 22. *clausus*; 23. *similis*; 27. *galapagoensis*?; 28. *congener*; 31. *pisum*; 32. *Dugesii*; 35. *dumorum*?; 37. *festivus*; 38. *mixtus*; 40. *nigricans*; 44. *pubescens*; 47. *trifolium*; 48. *affinis*?
- 6 b. Telsum multo, fere duplo latius quam longius.
 14. *verrucosus*; 15. *crassus*; 21. *rubropunctatus*; 24. *multipunctatus*; 25. *glomus*; 29. *canariensis*; 30. *tuberosus*; 33. *grenadensis*;
7. Uropodum exopoditum parvum vel mediocre.
 36. *flavescens*; 37. *festivus*; 38. *mixtus*; 39. *oraniensis*; 40. *nigricans*; 41. *liliputanus*; 42. *sodalis*; 43. *viticola*.
- 7 a. Uropodum exopoditum minutissimum.
 11. *echinatus*; 12. *venustus*; 13. *truncorum*; 14. *verrucosus*; 15. *crassus*; 16. *silvarum*; 17. *zigzac*; 18. *pumilus*; 19. *nigrorufus*; 20. *scaberrimus*; 21. *rubropunctatus*; 22. *clausus*; 23. *similis*; 24. *multipunctatus*; 25. *glomus*; 26. *gigas*; 27. *galapagoensis*; 28. *congener*; 29. *canariensis*; 30. *tuberosus*; 31. *pisum*; 32. *Dugesii*; 33. *grenadensis*; 34. *vincentis*; 35. *dumorum*; 44. *pubescens*; 45. *hirsutus*.
- 7 b. Uropodum exopoditum nullum (? sec. Dollfus).
 46. *perlatus*; 47. *trifolium*.
8. Uropodum endopoditum mediocre, telso nonnihil brevius.
 15. *crassus*; 23. *similis*; 33. *grenadensis*; 35. *dumorum*; 39. *oraniensis*; 41. *liliputanus*; 42. *sodalis*; 43. *viticola*; 46. *perlatus*.
- 8 a. Uropodum endopoditum parvum, quadruplo vel paulo plus longius quam latius.
 13. *truncorum*; 16. *silvarum*; 17. *zigzac*; 20. *scaberrimus*; 25. *glomus*; 34. *vincentis*; 36. *flavescens*; 37. *festivus*; 38. *mixtus*; 40. *nigricans*; 44. *pubescens*; 45. *hirsutus*.
- 8 b. Uropodum endopoditum minutissimum, duplo vel rarissime triplo longius quam latius.

11. *echinatus*; 12. *venustus*; 14. *verrucosus*; 18. *pumilus*; 19. *nigrorufus*; 21. *rubropunctatus*; 22. *clausus*; 24. *multipunctatus*; 28. *congener*; 29. *canariensis*; 30. *tuberosus*; 31. *pisum*; 32. *Dugesii*; 47. *trifolium*.

11. Armadillo echinatus.

(Tab. IX fig. 35—37).

Diploexochus echinatus Br. Consp. 30.

Armadillo echinatus B.-L. Crust. Is. Terr. 26.

Patria: Brazil. Trinidad, at Port of Spain. (Dr. Bürger in Mus. Göttingen).

12. Armadillo venustus.

(Tab. IX fig. 30—31).

Armadillo venustus B.-L. Ent. Med. 1893. 114. — Dollf. An. soc. ent. Fr. LXII 340. Tb. 9. f. 3.

Patria: Venezuela. Trinidad, at Port of Spain. (Dr. Bürger in Mus. Göttingen).

13. Armadillo truncorum.

(Tab. IX fig. 34).

Armadillo truncorum B.-L. Ent. Med. 1893. 116.

Patria: Venezuela.

14. Armadillo verrucosus.

Ovalis vel breviter ovalis, convexus. Caput rugis vel tuberculis asperum; trunci segmenta tuberculis in posteriore elevatiore parte segmentorum irregulariter transverse biseriatis, ad latera majoribus, positis; caudæ segmenta serie transversa verrucularum vel tuberculorum sæpe deletorum munita; telsum tuberculis duobus, in basi positis, majoribus. Cetera superficies dense et minutissime squamata.

Oculi majores, globosi; ocelli numero c. 16.

Antennæ breves, tertiam corporis partem longitudine vix æquant; scapi articuli 2. et 4. subæque longi; flagelli articulus 1. quadruplo brevior quam articulus 2.

Epistoma margine superiore frontem nonnihil maxime

in lateribus superante. Clypeus perpendicularis, lobis lateralibus parvis, rotundatis, subsemicirculis.

Trunci segmentum 1. epimeris leviter alticinctis, margine laterali post medium sulcato et post profunde subæqualiter fisso: lacinia interior rotundata, lacinia exterior rotundate truncata, interiore paulo brevior. Epimera segmenti 2. profunde bipartita: lamina interior angusta, retracta; pronotum perbreve, vigesima parte dorsi vix longius. Margo posterior omnium segmentorum, maxime segmenti 1. et 2., utrinque leviter incurvus. Epimera segmentorum 5.-6.-7. subtus duplicatura anteriore.

Caudæ segmenta 3.-4.-5. epimeris paulum revolutis, subrectangulis, nullo processu inferiore instructis. Pleopodes primi paris in femina perparvi. transversi, trachea parva area operculari vix conspicua instructi.

Telsum tertia parte vel plus latius quam longius, post leviter coarctatum; basis multo longior quam apex, margine postico subtransverso.

Uropodum scapus nonnihil longior quam latior; latus exterius subrectum, latus interius leviter incurvum. Exopoditum minutissimum, punctiforme, lateri interiori scapi procul ab apice insertum. Endopoditum minutissimum, vix duplo latius quam longius.

Unicolor, griseus, maculis parvis albidis in capite et trunci segmentis ad latera ornatus; pedes pallidi, antennæ griseæ sæpe rufescentes.

Long. 5—6 m. m. Lat. 2,5—3,2 m. m.

Patria: South America. Some specimens were collected by Mr. F. v. Buchwald at Guayaquil in Ecuador, 10. July 1903; they were taken from under the bark of trees. (Mus. Hamburg).

15. Armadillo crassus.

Ovalis, valde convexus, lævis, subnitidus, glaber; tuberculositates ordinariæ omnino deletæ.

Oculi magni, maximam partem laterum capitis occupantes; ocelli numerosi, dense et regulariter quadriseriati, subdeplanati, numero c. 35.

Antennae tertia parte corporis vix longiores; scapi articuli 2. et 4. subaeque longi; flagellum?

Epistoma supra paulum reflexum, in medio leviter impressum, margine superiore frontem non superante. Clypeus lobis lateralibus magnis, extrorsum versis, elongate oblique triangulis, subacutis. Linea verticalis marginalis utrinque ante oculos producta et incurva, marginem superiorem epistomatis attingens.

Trunci segmentum 1. epimeris crassis, margine laterali crasso, non sulcato, post supra marginem leviter et subaequaliter fisso: lacinia interior rotundate triangula, paulo brevior quam exterior. Segmentum 2. epimeris ante oblique fissis: lacinia interior oblique triangula, parte apicali libera, obtusa; pronotum septimam partem dorsi explens. Segmenta 4.-5.-6.-7. in epimeris duplicatura inferiore, leviore, obliqua. Margo posterior segmentorum priorum utrinque levissime incurvus.

Caudae segmenta 1.-2. occulta; segmenta 3.-4.-5. epimeris brevioribus, subrectangulis, nulla duplicatura vel processu inferiore instructis; epimera segmenti 5. valde divergentia. Pleopus primi paris in femina nulla area operculari, solum trachea magna instructus.

Telson multo, tertia parte vel plus. latius quam longius, in medio minus fortiter coarctatum, margine postico leviter curvato, angulis externis subacutis.

Uropodum scapus ejusdem longitudinis et latitudinis basis magna, transverse rectangula; apex elongate rectangulus, vix angustatus. Exopoditum minutissimum, vix longius quam latius, lateri superiori scapi, prope marginem interiorum, procul ab apice insertum. Endopoditum satis longum, gracile, telso nonnihil brevius.

Subunicolor, griseus, lateribus et maculis in medio trunci pallidioribus.

Long. 16 m. m. Lat. 8 m. m.

Patria: The island St. Thomé in the gulf of Guinea. (Mr. R. Greeff in Mus. Marburg and Mus. Hamburg).

16. *Armadillo silvarum*.

Armadillo silvarum Dollf. Proc. zool. soc. Lond. 1896. 393.

Patria: St. Vincent Island.

Remarks. This species with the following, both unknown to me, must probably be inserted here.

17. *Armadillo zigzac*.

Armadillo zigzac Dollf. Pr. zool. soc. Lond. 1896. 394.

Patria: St. Vincent Island.

18. *Armadillo pumilus*.

Armadillo pumilus B.-L. Ent. Med. 1893. 115.

Patria: Venezuela.

19. *Armadillo nigrorufus*.

Armadillo nigrorufus Dollf. An. soc. ent. Fr. LXII. 340. Tb. 9 f. 1.

Patria: Venezuela.

20. *Armadillo scaberrimus*.

Armadillo scaberrimus Dollf. An. soc. ent. Fr. LXII. 340. Tb. 9 f. 4.

Patria: Venezuela.

21. *Armadillo rubropunctatus*.

Armadillo rubropunctatus B.-L. Ent. Med. 1893. 113.

Patria: Venezuela.

22. *Armadillo clausus*.

(Tab. IX fig. 25-29).

Armadillo clausus B.-L. Crust. Is. Terr. 23.

Patria: Venezuela. Trinidad at Port Spain (Dr. Bürger in Mus. Göttingen).

23. *Armadillo similis*.

Armadillo similis B.-L. Crust. Is. Terr. 24.

Patria: South America.

24. *Armadillo multipunctatus*.

Armadillo multipunctatus B.-L. Crust. Is. Terr. 282.

Patria: Venezuela.

25. *Armadillo glomus*.

(Tab. IX fig. 32—33).

Armadillo glomus B.-L. Land-Isop. Ost-Africas in Deutsch Ost-Africa IV. 8.

Patria: Zanzibar.

26. *Armadillo gigas*.

Cubaris gigas Miers, Pr. zool. soc. Lond. 1877. 666.

Patria: Nicaragua.

27. *Armadillo galapagoensis*.

Cubaris galapagoensis Miers, Pr. zool. soc. Lond. 1877. 74.

Patria: Galapagos Islands.

28. *Armadillo congener*.

Oblonge ovalis, convexus, minutissime et densissime squamatus.

Oculi mediocres; ocelli numero c. 18.

Antennæ breviores, tertiam corporis partem longitudine vix explentes: scapi articuli 2. et 4. æquales; flagelli articulus prior altero triplo vel quadruplo brevior.

Epistoma margine superiore frontem paululum superante; linea marginalis verticalis utrinque ante oculos ad marginem superiorem epistomatis continua producta; area lateralis, infraocularis, nulla fere. Clypeus brevis, subperpendicularis, lobis lateralibus brevibus, rotundatis.

Trunci segmentum 1. epimeris crassis, margine laterali per totam longitudinem sulco angustiore sed profundo instructo, post subæqualiter fissis: lacinia interior angustior sed paululo longior quam lacinia exterior; margo posterior segmenti utrinque vix conspicue incurvus. Segmentum 2. epimeris profunde fissis: lacinia interior subovalis, paulum retroducta, multo brevior et angustior quam lacinia exterior;

pronotum decima parte dorsi vix longius. Trunci segmentorum 5.-6.-7. epimera duplicatura inferiore, leviore, sublunari.

Caudæ segmenta 3.-4.-5. epimeris longioribus, subrectangulis, processu inferiore inflexo nullo; epimera segmenti 5. subconvergentia. Pleopus primi paris in femina area operculari mediocri instructus.

Telsum paulo latius quam longius, in medio satis coarctatum.

Uropodium scapus vix longior quam latior; exopoditum minutissimum fere punctiforme, lateri interiori scapi procul ab apice insertum; endopoditum brevissimum, ovale.

Color brunneus, flavomaculatus.

Long. 4—5 m. m. Lat. 2,5 m. m.

Patria: At Rio Nabilecche in the interior of Brazil. (7/97. Mr. G. Boggiani in Mus. Genova).

29. *Armadillo canariensis*.

(Tab. IX fig. 23—24).

Armadillo canariensis Dollf. Mém. soc. zool. Fr. VI. 48.

Patria: Canary Islands.

30. *Armadillo tuberosus*.

(Tab. X fig. 1—4).

Caput rugose tuberculatum. Trunci segmentum primum seriebus transversis tribus vel quattuor tuberculorum ornatum; series prima tuberecula quattuor majora, series secunda duo parva, series tertia multa, c. 12. mediocria, series marginalis postica c. 7 minora continent; omnia segmenta sequentia seriem transversam tuberculorum et post in medio tuberecula quaterna habent. Caudæ segmenta 3. et 4. tuberculis quaternis mediis, segmenta 5. et 6. tuberculis binis mediis instructa.

Oculi mediocres; ocelli numero c. 15.

Antennæ breviores; scapi articulus 4. paulo longior sed multo crassior quam 3., articulo 2. subæqualis; flagelli articulus 1. plus duplo brevior quam 2.

Epistoma supra subtriangulare prominens, marginem

frontalem paulum superans, infra carinula brevi: clypeus lobis lateralibus parvis, rotundatis.

Trunci segmentum 1. margine laterali post sulcato et profunde subæqualiter fisso; segmentum 2. epimeris fissis: lacinia interior parva, dentiformis.

Telsum multo, fere duplo, latius quam longius, lateribus leviter incurvis.

Uropodum exopoditum minutum, endopoditum breve.

Unicolor, pallide albus.

Long. 3,5 m. m. Lat. 1,8 m. m.

Patria: Hayti, at Port au Prince (1 spec. $\frac{7}{5}$ 94. Mr. H. Nepperschmidt in Mus. Hamburg).

Remarks. The place of this species here is possibly not entirely convenient, I was unable to make a deeper examination of the one little specimen present.

31. *Armadillo pisum*.

Armadillo pisum B.-L. Crust. Is. Terr. 32.

Patria: Florida at Key-West.

32. *Armadillo Dugesi*.

Armadillo Dugesi Dollf. Bul. soc. zool. Fr. XXI. 46.

Patria: Mexico.

33. *Armadillo grenadensis*.

Armadillo grenadensis B.-L. Ent. Med. 1893. 115.

Patria: Grenada Island.

Here I think will be placed the two following species unknown to me.

34. *Armadillo vincentis*.

Armadillo cinctus Dollf. Pr. zool. soc. Lond. 1896. 392.

Patria: St. Vincent Island.

Remarks. I have altered the name of this species, conf. sp. 2.

35. *Armadillo dumorum*.

Armadillo dumorum Dollf. Pr. zool. soc. Lond. 1896. 391.

Patria: St. Vincent Island.

36. *Armadillo flavescens*.

(Tab. X fig. 5).

Cubaris flavescens Br. Consp. 29.

Armadillo flavescens B.-L. Crust. Is. Terr. 20.

Ovalis, valde convexus, sublævis, subnitidus, minutissime squamatus.

Oculi mediocres vel majores a margine laterali paulum distantes; ocelli majores, numero c. 23.

Antennæ dimidio corpore paulo breviores; flagelli articulus prior altero fere triplo brevior.

Epistoma margine superiore frontem in lateribus paulum, in medio non superante; linea verticalis marginalis post duplex, crassa, utrinque ad marginem superiorem epistomatis producta; clypeus lobis mediocribus, oblonge rotundatis.

Trunci segmentum primum segmentis sequentibus manifesto majus, epimeris crassioribus, margine laterali alticincto, vix vel deletissime per longitudinem sulcato, post minus profunde et inæqualiter fissis: lacinia exterior multo major quam interior. Segmentum 2. epimeris oblique fissis: lacinia interior parva, subadcreta; pronotum decimam partem dorsi vix explens. Segmenta 5.-6.-7. et etiam caudæ segmentum 3. in epimeris duplicatura munita. Margo posterior segmentorum priorum, maxime segmenti 1., utrinque incurvus.

Caudæ segmenta 3.-4.-5. epimeris longioribus, oblique subrectangulis, angulis posticis minus acutis, processu inferiore fere nullo; epimera segmenti 5. subparallela.

Pleopodes primi paris in femina in medio inter se fere attingentes, area majore instructi.

Telsum ejusdem longitudinis atque latitudinis, in me-

dio fortius incurve coarctatum, supra per medium ad longitudinem leviter convexum.

Uropodum scapus multo longior quam latior, ad apicem paulum angustatus; exopoditum stiliforme, parvum, tamen nonnullis partibus longius quam latius; endopoditum breve.

Subunicolor, e flavo brunneus.

Long. 10—12 m. m. Lat. 5—6 m. m.

Patria: Cape-Town (Mus. Berlin). Port Elisabeth and Algoa-Bay. (¹²/₉₈ & ¹⁰/₉₉ Dr. med. H. Brauns in Mus. Hamburg).

37. *Armadillo festivus*.

(Tab. IX fig. 40—41).

Ovalis, valde convexus, transverse delete tuberculatus; trunci segmentum primum ante tuberculis mediis majoribus; telsum in basi bituberculatum ad longitudinem carinatum.

Oculi mediocres, a margine laterali paulum distantes; ocelli numero c. 20.

Antennæ dimidio corpore paulo breviores; scapi articulus 2. vix brevior quam articulus 4.; flagelli articulus prior altero triplo brevior.

Epistoma margine superiore frontem in lateribus paulum, in medio vix conspicue superante; linea verticalis marginalis post duplex, crassa, utrinque fere ad marginem superiorem epistomatis producta; clypeus lobis minoribus, paulum oblonge rotundatis.

Trunci segmentum 1. epimeris crassioribus, margine laterali alticincto, per longitudinem leviter, ante subdelete, sulcato, post leviter et valde inæqualiter fisso: lacinia exterior interiore multo major, sed minus crassa. Segmentum 2. epimeris valde inæqualiter fissis: lacinia interior parva, angusta, adcreta, solum apice libera; pronotum decimam partem dorsi longitudine explens. Segmenta 5.-6.-7. duplicatura minore in epimeris munita. Margo posterior segmentorum trium priorum utrinque fortius incurvus.

Caudæ segmenta 3.-4.-5. epimeris mediocribus, oblique subrectangulis, angulis posticis acutis, processu inferiore

nullo, neque duplicatura inferiore in segmento 3. instructis; epimera segmenti 5. subparallela vel paulum convergentia. Pleopodes feminae primi paris in medio attingentes.

Telsum nonnihil, fere quarta parte, latius quam longius, in medio levissime coarctatum.

Uropodum scapus paulo longior quam latior; exopoditum minutum, vix duplo longius quam latius; endopoditum breve.

Color fuscus, pulchre flavomaculatus.

Long. 8 m. m. Lat. 4 m. m.

Patria: South Africa. Port Elisabeth (¹⁵/₁₂ 98 Dr. med. Brauns in Mus. Hamburg).

38. Armadillo mixtus.

Paulum oblonge ovalis, valde convexus, sublævis, minutissime squamatus, ad latera segmentorum trunci delete tuberculatus, etiam in segmento primo ante tuberculis duobus deletis munitus; telsum in basi bituberculatum, ad longitudinem carinatum.

Trunci segmentum 1. epimeris crassioribus, margine laterali per longitudinem manifesto sulcato, post inæqualiter fisso: lacinia interior exteriore nonnihil minor et non crassior. Segmenta 5.-6.-7. cum segmento 3. caudæ in epimeris duplicatura magna, inferiore instructa. Margo posterior segmentorum 1.-2.-3. utrinque leviter incurvus.

Caudæ segmenta 3.-4.-5. epimeris mediocribus, oblique subrectangulis, angulis posticis acutis.

Telsum paulo latius quam longius, medio leviter coarctato.

Uropodum scapus nonnihil longior quam latior; exopoditum parvum, tamen multis partibus longius quam latius; endopoditum breve.

Unicolor, flavus.

Long. 7 m. m. Lat. 3,2 m. m.

Patria: Cape Colony, at Algoa Bay. (Mus. Hamburg).

Remarks. I have seen only one specimen taken by Dr. H. Brauns together with *Arm. flavescens* at Algoa-Bay, it makes a transition between the two species *Arm. flavescens* and *Arm. festivus*; I only give above the description of the differences.

39. *Armadillo oraniensis*.

(Tab. IX fig. 39).

Armadillo oraniensis Dollf. Mem. soc. zool. Fr. VIII. 346.

Patria: Transvaal, Orange-River Colony.

40. *Armadillo nigricans*.

(Tab. IX fig. 42).

Cubaris nigricans Br. Consp. 29.

Armadillo nigricans B.-L. Crust. Is. Terr. 22.

Patria: Cape-Town (Mus. Berlin); Port Elisabeth (¹⁵/₁₂ 98 Dr. Brauns in Mus. Hamburg); I have seen several specimens from Cape-Town taken at a river on Table-mountain and under stones in the plain (²⁷/₁₁ 71—⁴/₈ 72 G. de V. in Mus. Stockholm).

41. *Armadillo liliputanus*.

Armadillo liliputanus Dollf. Mém. soc. zool. Fr. VIII. 346.

Patria: Transvaal.

42. *Armadillo sodalis*.

Armadillo sodalis B.-L. Crust. Is. Terr. 286.

Patria: Egypt.

43. *Armadillo viticola*.

Armadillo viticola Dollf. Pr. zool. soc. Lond. 1896. 396.

Patria: Grenada Island.

44. *Armadillo pubescens*.

Armadillo pubescens B.-L. Crust. Is. Terr. 287.

Patria: Cape-Town.

45. *Armadillo hirsutus*.

(Tab. IX fig. 38).

Armadillo hirsutus Koch, Rosenh. Thiere Andalus. 421. — B.-L. Crust. Is. Terr. 20.

Patria: South Spain.

The 5 following species, Nr. 46—50, unknown to me, certainly belong to this section of *Armadillo*, although they seem to be reciprocally very different according to the descriptions of their authors.

46. *Armadillo perlatus*

Armadillo perlatus Dollf. Pr. zool. soc. Lond. 1896. 395.

Patria: West-India Archipelago: Either from St. Vincent or from Grenada (sec. Dollf.).

47. *Armadillo trifolium*.

Armadillo trifolium Dollf. Bull. soc. d'étud. sc. XII.

Patria: Cape Verd Islands, at St. Jago.

48. *Armadillo affinis*.

? *Spherillo affinis* Dana Pr. Ac. Philad. VII. 176.

Armadillo speciosus Stuxbg. Öfv. Sv. Ac. Förh. 1875. 2. 62.

» *californicus* B.-L. Crust. Is. Terr. 40.

Patria: California.

49. *Armadillo nitidus*.

Armadiidium nitidum Wedenissow, Bul. soc. ent. Ital. XXVI. 1894. (sep. p. 11).

Patria: Somali-coast.

50. *Armadillo granarius*.

Armadillo granarius Nicol. in Gay hist. fis. pol. Chile. III. 275.

Patria: Chile.

Sectio III. I only know one species I can put in this group; the characters will be found below in the description of this species.

51. Armadillo microps.

(Tab. X fig. 6—9).

Oculi parvi, procul a margine laterali capitis positi; ocelli parvi, inter se distantes, interdum fere evanidi, numero c. 15.

Antennæ crassæ, breves; articulus 4. scapi vix longior quam articulus 2., articulus 5. paulo modo longior quam articulus 4.; flagelli articulus 1. perbrevis altero fere quadruplo brevior.

Epistoma margine superiore frontem nonnihil superans. Clypeus perpendicularis, margine superiore profunde incurvo, lobis lateralibus parvis, late rotundatis.

Trunci segmentum 1. epimeris tenuibus, leviter revolutis, post integris, subtus, nonnihil ante marginem posteriorem et longe a margine laterali, plica parva instructis; margo posterior utrinque leviter sinuatus, angulis posticis late rotundatis, vix retroductis. Segmentum 2. epimeris ante crassioribus, plica inferiore brevi, ovali instructis; pronotum perbreve, vigesimam partem dorsi vix longius. Pedes trunci crassiores.

Pleopodes primi paris in femina aream opercularem nullam, solum tracheam parvam habent.

Telsum multo brevius quam latius, in medio fortiter coarctatum, apice leviter curvate truncato.

Uropodum scapus ad apicem valde angustatus, latere interiore fortiter incurvo, latere exteriori subrecto, apice angusto, oblique rotundato. Exopoditum minimum, angulo lateris interioris scapi, longe ab apice insertum; endopoditum brevissimum.

Unicolor, brunneus.

Long. 8—9 m. m. Lat. 4—4,5 m. m.

Patria: Borneo, at Telang (Mr. Grabowski in Mus. Berlin). New Holland, at Peak Downs. (Mus. Hamburg).

Sectio IV. Also this group contains but one species, which on account of its thorny surface has some resemblance to *Ar. echinatus*, species No. 11; but in other relations it is

very different from it. All the epimers, principally those of the first segment are large and thin, and this segment has at the basis of the legs a little tooth, but not the hind-corner split as in *A. echinatus*.

52. *Armadillo aculeatus*.

(Tab. X fig. 10—13).

Armadillo aculeatus B.-L. Crust. Is. Ter. 289. —
Patria: South Africa, at Chinchoxo.

Sectio V. This group of which I only know 3 species takes a position isolated from the other *Armadillones* because of the special structure of the antennæ. The antennæ are extraordinarily short, caused by the shortness of all the joints. The exopodit of the first pair of maxillæ is also very singular; it certainly has, as in all the other *Oniscidæ*, in the apex two pencil-brushes, but in the species of this group the hinder is thicker and much shorter than the former.

53. *Armadillo Feæ*.

Armadillo Feæ B.-L. An. Mus. Genova. s. 2. XIV. 606.
Patria: Burma.

54. *Armadillo galeatus*.

(Tab. X fig. 19).

Armadillo galeatus B.-L. An. Mus. Genova. s. 2. XIV. 605.
Patria: Birma.

55. *Armadillo marcidus*.

(Tab. X fig. 14—18).

Superficies dense et minutissime squamata.

Oculi magni, prominentes, ocelli c. 20.

Antennæ perbreves, quarta parte corporis vix longiores; omnes articuli breves et crassi; articulus 5. longissimus, deinde 2. et 3. subæquales; articulus 4. subtetragonus, brevior quam latior; flagellum breve, articulus 1. altero paulo brevior.

Epistoma margine superiore paulo reflexo frontem valde superante. Linea marginalis capitis post percrassa, utrinque ante oculos producta, valde ascendens marginem superiorem epistomatis attingens. Clypeus brevis, subperpendicularis, lobis lateralibus majoribus, oblique tetragonis.

Trunci segmentum 1. epimeris tenuioribus, leviter revolutis, post integris, infra nonnihil a margine exteriori plica parva ovali instructis. Margo posterior segmenti 1. utrinque leviter incurvus. Segmentum 2. epimeris bipartitis: lacinia interior subtetragona, exteriora multo minor; pronotum octavam partem dorsi longitudine explens. Pronotum segmentorum sequentium post sensim longius, segmenti 7. quintam partem dorsi explens. Pedes omnes crassiores.

Caudæ segmenta 3.-4.-5. epimeris latis, tetragonis, leviter repandis; epimera segmenti 5. manifesto divergentia.

Telsum multo, fere duplo latius quam longius in medio late et fortiter coarctatum.

Uropodum scapus nonnihil longior quam latior, apice leviter rotundate truncato; exopoditum parvum, vix duplo longius quam latius, angulo superiori lateris interioris scapi procul ab apice insertum; endopoditum brevius.

Unicolor, flavo-brunneus.

Long. 10 m. m. Lat. 5 m. m.

Patria: One specimen at Pulo-Penang, c. 700 m. height during the expedition of Mrr. Fea & Loria ²/₇₉ (Mus. Genova).

Sectio VI. (*Cubaris Br. e. p.*). This and the following group are chiefly distinguished by the large articular face (pronotum) of the truncal segments. This face takes in a fifth, and very often, especially in the hindermost segments, a fourth part of the dorsal surface. The hind margin of the head, which is often thick behind, is on both sides drawn forward passing the eyes and is joined together to the superior margin of the epistoma. The epimers of the truncal segments are large and thin; the epimer of the first segment is not split behind, but has on the underside,

near the insertion of the legs a little fold; also on the underside of the epimer of the second segment is a larger or lesser fold most often present. The exopodit of the uropods is usually very well developed, and reach often to the hindmargin of the telsum.

- a. Flagelli articulus prior altero duplo vel triplo brevior. Species 56—73.
 b. Endopoditum uropodum perbreve. Species 56--64.

56. Armadillo murinus.

(Tab. X fig. 20—22).

Cubaris murina Br. Consp. 28.

Armadillo Cubensis Sauss. Mém. Soc. Genève. XIV. 65 sep.
 Tb. 5. f. 42.

Armadillo murinus B.-L. Crust. Is. Terr. 27.

Patria: This species seems to be within the tropical countries cosmopolitic, at least it is found in a great number of the harbourtowns. I have seen specimens from the following places: Asia: Burma (Mus. Genova); Malabar coast, at Mahé (Mr. E. Deschamps, $\frac{4}{1}$ 1900, in Mus. Hamburg); Malay Peninsula at Patani (Skeat Exp. in Mus. London), at Singapore (Mr. Mar. Jensen in Coll. B.-L.); Sumatra at Bindjey (Mr. J. W. Burchard, $\frac{28}{4}$ 94, in Mus. Berlin), at Edi and Sipoholon (Dr. P. Klein in Coll. B.-L.), at Singkarah (Coll. Weber sec. Dollfus); Java, at Buitenzorg (Coll. Weber sec. Dollf.); Borneo, at Telang (Mr. Grabowski in Mus. Berlin), at Bendjermasin (Mus. Hamburg); Timor (Mr. Loria in Mus. Genova); Flores, at Maumeru (Coll. Weber sec. Dollf.); Philippine Island (Coll. Simon sec. Dollf.), Luzon (Mus. Berlin). Africa: Sansibar (Mus. Berlin sec. Gerstaecker); Seychelle Islands, at Mahé and at Marianne (Mr. Alluand sec. Dollf.), (Prof. Möbius in Mus. Kiel), (Mr. A. Brauer in Mus. Hamburg), Madagascar (Mr. Sikora in Coll. B.-L.). Ascension (Deuts. S. Pol. Exped. in Mus. Kiel). America: Mexico, at Guanajuata (Mus. Bruxelles); Cayenne (Mus. Varszava); Brazil, at Rio and at Sepiteba (Mr. Boving-Petersen in Mus. Kjøbenhavn), at Corumba in Matto grosso (Mr. G. Boggiani, $\frac{25}{4}$ 97, in Mus. Genova); Haïti, under bark of a tree, $\frac{13}{6}$ 94, (Mr.

H. Nepperschmidt in Mus. Hamburg), at Puerta Plata in a rotten trunk of wood abundant together *Porc. laevis* ²⁸/₈ 99, (Dr. R. Mull in Mus. Hamburg); Portorico (Mus. St. Petersburg); Cuba (Prof. Saussure); Jamaica, St. Thomas (Mus. London sec. Miers). Australia: Peak Downs (Mus. Hamburg); Sandwich Isl. (Mus. Varszava), Oahu (Mus. Kjobenhavn).

All the following species, No. 57—62, stay near to *Ar. murinus*, renewed examinations will perhaps make evident, that some of them are identical with this species.

57. *Armadillo cinereus*.

Cubaris cinerea Br. Consp. 28.

Armadillo cinereus B.-L. Crust. Is. Terr. 29.

Patria: Brasilia (Mus. Berlin).

Remarks. This species is certainly a good species.

58. *Armadillo brunneus*.

Cubaris brunnea Br. Consp. 28.

Armadillo murinus B.-L. Crust. Is. Terr. 27.

Patria: Demerara.

59. *Armadillo galbineus*.

Armadillo galbineus Eschsch. Mém. soc. Moscou v. VI. 112.

Patria: Guahm Island.

Remarks. This species is perhaps belonging to the genus *Spherillo*.

60. *Armadillo Borelli*.

Armadillo Borelli Dollf. Boll. Mus. Torino. IX. n^o. 183. 1.

Patria: Rio Apa in Over-Paraguay.

61. *Armadillo flavobrunneus*.

Armadillo flavobrunneus Dollf. Boll. Mus. Torino. XI. n^o. 228. 1.

Patria: At Punta de Sabana in Darien.

62. *Armadillo javanensis*.

Armadillo javanensis Dollf. Notes Leyden Mus. XI. 91. — Bull. soc. étud. sc. XII.

Patria: Batavia, also in Philippine Islands and in Sandwich Islands.

63. Armadillo miser.

Ocelli numero 12—14, interiores minores.

Antennæ breves, tertiam corporis partem æquantes; scapi articulus 4. nonnihil longior quam articulus 2.; flagelli articulus prior altero duplo vel plus brevior.

Epistoma margine superiore frontem nonnihil maxime in lateribus superans; frons utrinque intra oculos leviter et oblique birugosa. Clypeus lobis parvis, rotundatis.

Trunci segmentum 1. epimeris infra per longitudinem curvate carinatis: carina in dentem parvum, acutiorem desinens; anguli priores segmenti acuti, posteriores late rotundati. Segmentum 2. epimeris infra leviter fissis, plica interiore parva, subtriangula; pronotum fere tertiæ parti dorsi longitudine æquale. Margo posterior omnium segmentorum maxime priorum utrinque incurvus.

Caudæ segmenta epimeris longioribus; epimera segmenti 5. subparallela. Pleopodes primi paris in mare area operculari ovata, retroducta, in medio inter se fere attingentes.

Telsum vix latius quam longius, in medio fortiter coarctatum; basis et apex tere æque longa; margo posterior subrectus, angulis externis rotundatis.

Uropodum scapus brevis, paululo longior quam latior; apex a basi non discretus; margo interior leviter incurvus; apex post rotundatus. Exopoditum mediocre vel parvum, procul ante apicem scapi desinens. Endopoditum perbreve, paulo longius quam latius, telso multis partibus brevius.

Subunicolor, brunneus.

Long. 5,5 m. m. Lat. 3 m. m.

Patria: New Holland; I have seen only one male specimen taken at Victoria (ex coll. Hausehild).

64. Armadillo glomerulus.

Armadillo glomerulus B.-L. Ann. Mus. Genova s. 2. XIV. 605.

Patria: Burma.

- bb. Endopoditum uropodum mediocre vel longum. Species 65—75.
 c. Telsum brevius; apex non longior quam basis. Species 65—68.

65. Armadillo proximatus.

(Tab. X fig. 23).

Ocelli numero c. 20—22, magni, in series quatuor regulariter positi.

Antennæ breves, tertia corporis parte vix longiores; scapi articulus 4. vix longior quam articulus 2.: flagelli articulus prior altero triplo vel plus brevior.

Epistoma margine superiore mediam frontem paulum ad latera paulo plus superante, supra fovea media lata minus profunda impressum. Frons intra oculos utrinque birugosa, vertex transverse impressus. Clypeus lobis mediocribus, paulum oblonge ovalibus.

Trunci segmentum 1. epimeris infra per longitudinem curvate carinatis: carina in dentem parvum acutiorem desinens; anguli priores segmenti acuti, posteriores rotundate obtusi. Segmentum 2. epimeris infra dente anteriore mediocri, acuto instructis Margo posterior omnium trunci segmentorum maxime priorum utrinque incurvus.

Caudæ segmenta epimeris mediocribus: epimera segmenti 5. valde divergentia.

Telsum nonnihil latius quam longius, in medio fortius coarctatum; basis et apex fere æque longa; margo posterior subrectus, angulis externis rotundatis.

Uropodum scapus multo, fere duplo, longior quam latior; apex a basi angulo lateris interioris distinctus, apex basi multo longior, post rotundate obtusus. Exopoditum parvum, procul ante apicem scapi desinens. Endopoditum mediocre.

Subnicolor brunneus.

Long. 9 m. m. Lat. 4,7 m. m.

Patria: Borneo, at Telang. (Mus. Berlin).

66. Armadillo immotus.

(Tab. X fig. 24).

Oculi magni, totum latus capitis occupantes; ocelli numero c. 25, parvi.

Antennæ?

Epistoma margine superiore in medio reflexo, fronti adereto, eamque non in medio sed in lateribus nonnihil superante; supra fovea media lata, subtriangula, æquiore impressum. Clypeus lobis mediocribus, paulum oblique ovalibus. Caput post leviter transverse impressum.

Trunci segmentum 1. epimeris infra in longitudinem curvate leviter carinatis: carina in plicam parvam obtusam finiens: anguli priores segmenti acuti, posteriores rotundate obtusi. Segmentum 2. epimeris infra fissis: lacinia interior mediocris, ovalis, exterior parte libera. Margo posterior omnium segmentorum trunci maxime duorum vel trium priorum utrinque incurvus.

Caudæ segmenta epimeris mediocribus; epimera segmenti 5. valde divergentia.

Telsum nonnihil latius quam longius, in medio fortius coaretatum; apex basi paulo longior; margo posterior leviter curvatus, angulis externis late rotundatis.

Uropodum scapus multo longior quam lator; apex a basi angulo discretus; apex basi multo longior, post rotundate curvatus. Exopoditum parvum vel mediocre, satis ante apicem scapi desinens. Endopoditum mediocre.

Subunicolor, fuscus.

Long. 8,5 m. m. Lat. 4,5 m. m.

Patria: Pulo Penang, 6 -- 700 m., (³/₁₈₇₀ Mrr. Fea. & Loria. Mus. Genova).

Here I think can be placed the two following species, unknown to me.

67. *Armadillo albipes*.

Armadillo albipes Dollf. in Weber, Reise Niederl. O.-Ind. IV. 359. Tb. 13. f. 2.

Patria: Sumatra.

68. *Armadillo arcuatus*.

Armadillo arcuatus Dollf. in Weber, Reise Niederl. O.-Ind. IV. 360. Tb. 13. f. 3.

Patria: Sumatra.

cc. Telsum longius; apex manifesto longior quam basis. Species 69—73.

69. Armadillo egens.

Superficies segmentorum 2.-7. serie transversa granulorum deletorum et stria elevata obliqua prædita.

Oculi majores; ocelli numero 20, regulariter positi.

Antennæ?

Epistoma margine superiore frontem vix in medio in lateribus nonnihil superante; ante supra in medio leviter impressum. Clypeus lobis parvis, rotundatis. Caput post transverse impressum.

Trunci segmentum 1. epimeris tenuibus, infra plica minutissima vix conspicua munitis, angulis anterioribus acutis, posterioribus rotundate obtusis. Segmentum 2. ante subtus paulo crassius, plica nulla munitum. Margo posterior quinque priorum segmentorum utrinque leviter incurvus.

Caudæ segmenta epimeris majoribus; epimera segmenti 5. paulum divergentia.

Telsum vix latius quam longius, paulum ante medium leviter coarctatum; apex basi paululo longior, margine posteriore subrecto, angulis externis rotundatis.

Uropodum scapus nonnihil longior quam latior; apex a basi non discretus, margine interiore leviter incurvo, post extra late rotundatus. Exopoditum longum, apicem scapi tamen non attingens. Endopoditum longum, marginem posteriorem telsi fere attingens.

Unicolor, griseus.

Long. 7 m. m. Lat. 3,5 m. m.

Patria: »Nyassaland«, one specimen among a series of specimens of a species of *Periscyphis* (Mus. London).

70. Armadillo conglobator.

Oculi majores; ocelli regulariter positi, numero 22.

Antennæ?

Epistoma margine superiore medio fronti adpresso eamque non in medio sed in lateribus paulum superante,

supra in medio leviter impressum. Clypeus lobis medio-cribus, ovalibus. Caput post læve, convexum.

Trunci segmentum 1. epimeris magnis, revolutis, infra per longitudinem carinatis: carina in plicam parvam obtusam finiens. Segmentum 2. plica vel lamina inferiore, medioeri, solum apice libera, instructum. Margo posterior priorum segmentorum utrinque leviter incurvus.

Caudæ segmenta epimeris majoribus; epimera segmenti 5. satis divergentia.

Telsum ejusdem ferme longitudinis et latitudinis, ante medium satis coarctatum; apex basi paulo longior; margo posterior levissime curvatus, angulis externis rodundate obtusis.

Uropodum scapus duplo longior quam latior, post angustior; basis ab apice non discretus, margine exteriori leviter curvato, margine interiori leviter incurvo, angulo apicali interiori acutiore. Exopoditum longum, apicem scapi tamen non attingens. Endopoditum brevius et crassius.

Subunicolor, brunneus.

Long. 9 m. m. Lat. 5,5 m. m.

Patria: Pulo Penang, one specimen among specimens of *Arm. immotus* (Mus. Genova).

71. *Armadillo infuscatus*.

Armadillo infuscatus B.-L. in W. F. Lanchester, On the Crustacea collected during the „Skeat Expedition“ to the Malay Peninsula. Proc. zool. Lond. 1902. 380*).

Patria: Malay Peninsula, at Goah Janat.

72. *Armadillo pallidus*.

Armadillo pallidus B.-L. l. supra cit. Proc. zool. Lond. 1902. 380.

Patria: Malay Peninsula, at Bukit Besar.

*) The detailed description of this species and of the following will be given soon together with descriptions of the other terrestrial Isopods from the „Skeat Expedition“ in the Proceedings of the Zoological Society of London.

73. *Armadillo collinus*.

(Tab. X fig. 25—27).

Armadillo collinus B.-L. An. Mus. Genova. s. 2. XIV. 604.

Patria: Burma.

aa. Flagelli articuli longitudine subæquales. Species 74—75.

74. *Armadillo intermixtus*.

(Tab. X fig. 28—32).

Minus convexus, ad latera subdeplanatus, epimeris maximis.

Oculi majores; ocelli majores, regulariter positi, numero c. 17.

Antennæ longæ, dimidio corpore paulo longiores; scapi articulus 3. vix brevior quam articulus 2., multo brevior quam articulus 4., duplo brevior quam articulus 5.; flagellum gracile, dimidio articuli 5. scapi paulo longius, articulus prior altero vix brevior.

Epistoma margine superiore medio fronti fere adpresso, hanc non in medio sed in lateribus paulum superante. Clypeus lobis longis, angustis, extrorsum versis, acute triangularis. Caput post læve, convexum.

Trunci segmentum 1. epimeris maximis, carina inferiore ante manifestiore post deleta; post subtus plica brevi, acute triangula, subdentiformi. Segmentum 2. plica vel lamina interiore medioeri. Margo posterior priorum segmentorum, maxime primi et secundi utrinque incurvus.

Caudæ segmenta epimeris majoribus; epimera segmenti 5. minus divergentia. Telsum ejusdem fere longitudinis et latitudinis, ante medium satis coarctatum; apex multo longior quam basis; margo posterior curvatus, angulis externis late rotundatis.

Uropodium scapus multo, fere duplo, longior quam latior; basis ab apice vix discreta; apex postice angustatus, acutior. Exopoditum longum, gracile, apicem scapi subattingens. Endopoditum medioere, multo brevius quam telsum.

Color e griseo flavus, maculis parvis albidis conspersis.

Long. 10 m. m. Lat. 6,5 m. m.

Patria: At Selangore, with the following species in caves. (Mus. London).

75. *Armadillo nigromarginatus*.

Armadilloni intermixto propinquus et similis, indicibus sequentibus præcipue differt:

Oculi magni; ocelli magni, regulariter in series quattuor positi, numero c. 22.

Trunci segmentum 1. epimeris magnis, carina inferiore subdeleta, plica posteriore rotundate triangula. Margo posterior segmentorum priorum minus fortiter utrinque incurvus.

Caudæ segmenta epimeris maximis; epimera segmenti 5. perpaulum divergentia.

Telsum manifesto, fere tertia parte, longius quam latius, longe ante medium satis coarctatum; apex basi multo, fere duplo, longior, subquadratus, lateribus ad basin paulum convergentibus, margine posteriore levissime curvato, angulis externis rotundatis.

Uropodum scapus duplo longior quam latior, angustatus, latere exteriori ad basin, latere interiori ad apicem fortiter incurvo; ipse apex acutior. Exopoditum longum, gracile, apicem scapi attingens. Endopoditum longum, marginem posteriorem telsi tamen non attingens.

Color e griseo flavus, marginibus posterioribus omnium segmentorum maxime in epimeris nigris.

Long. 9,5 m. m. Lat. 5,5 m. m.

Patria: Malay Peninsula. One specimen taken in the year 1897 by Mr. H. N. Ridley in a cave at Selangore. (Mus. London).

Remarks. Although the only specimen has no antennæ, I have no hesitation in placing the species here.

Sectio VII. (*Cubaris Br. e. p.*). Although the species of this group in regard to many characters seem to follow the species of section VI very closely, because they have the same large

pronotum, the same thin unsplit epimer of the truncal segments and the well developed exopodit of the uropods, they are in other relations entirely isolated. Most remarkable is that the epistoma is not fixed with its superior margin firm to the skull but separated from it by a more or less deep furrow. The fold on the underside of the two first segments of the truncus is very small most often wanting. The opercula of the first pair of the pleopods, which in the species of the section VI are wanting, are often very large here. The exopodit as well as the endopodit of the uropods is long and slender, and finally is the telsum, which in all other Armadillones as result of the narrowness in the middle has the form of an hourglass, not or very little narrower in the middle, and the hindpart has figure of a regular shorter or longer quadrangle.

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- a. Epistoma margine superiore frontem in lateribus nonnihil in medio vix vel paululum superans. Species 76—88.
 b. Et exopoditum et endopoditum uropodum breviora. Telsum in medio manifestius coarctatum. Species 76—79.

76. Armadillo limbatus.

(Tab. X fig. 33).

Cubaris limbata Br. Consp. 28. 4. Tb. 4 f. 18.

Oculi medioeres, margini capitis approximantes; ocelli numero c. 20.

Epistoma margine superiore mediæ fronti adpresso eamque vix superante, ad latera sulco transverso discreto frontem nonnihil superante. Linea verticalis marginalis utrinque extra oculos producta epistoma non attingit. Caput in vertice impressione transversa manifesta. Clypeus fornicatus, lobis lateralibus parvis, rotundate triangulis.

Trunci segmentum 1. epimeris tenuioribus, ante revolutis, infra dente vel plica minima, acuta. Segmentum 2. plica inferiore parva, obtusa. Segmentum 7. duplicatura inferiore levissima.

Caudæ segmenta 3.-4.-5. epimeris mediocribus. processu inferiore nullo; epimera segmenti 5. paulum divergentia. Pleopodes primi paris in femina area operculari perbrevis sed lata in medio inter se fere attingentes; omnes tracheæ parvæ.

Telsum paulo latius quam longius; in medio fortius incurvum, supra in basi leviter bituberculatum in apice leviter carinatum.

Uropodum scapus paulo longior quam latior, margine inferiore leviter incurvo. Exopoditum angulo superiori lateris interioris scapi procul ab apice insertum, brevius, tamen nonnullis partibus longius quam latius; endopoditum parvum, circiter triplo longius quam latius.

Color e griseo brunneus ad latera dilutior, in caudæ lateribus flavus.

Long. 8 m. m. Lat. 4 m. m.

Patria: Cape Colony. I have seen one specimen dried up, probably from Cape-Town (Mus. Berlin), and an other taken at Port Elisabeth, ¹⁹/₁₁ 1897, by Mr. J. L. Drege (Mus. Hamburg).

77. *Armadillo griseo-albus*.

Armadillo griseo-albus Dollf. Mém. soc. zool. Fr. VIII. 347.

Patria: At Matjesfontein in Cape Colony (Mus. Dollfus).

78. *Armadillo cordatus*.

Armadillo cordatus Dollf. Mém. soc. zool. Fr. VIII. 348.

Patria: At Bloemfontein in Orange Colony (Mus. Dollfus).

79. *Armadillo emunitus*.

Oculi magni, majorem partem laterum capitis occupantes; ocelli numero c. 22-24, majores, regulariter quadri-seriati.

Antennæ breviores, tertiam corporis partem longitudine paululum superantes; scapi articulus 2. paululo brevior quam articulus 4.; flagelli articulus prior altero duplo brevior.

Epistoma margine superiore frontem vix in medio, in lateribus paulum superante, supra in medio impressione rotunda, leviore. Clypeus lobis medioeribus, rotundate triangulis. Vertex impressione transversa minus manifesta.

Trunci segmentum 1. epimeris infra delete carinatis, post plica vel dente parvo obtuso; anguli priores acuti, posteriores late rotundati. Segmentum 2. epimeris subintegris, plica inferiore minutissima, vix conspicua. Margo posterior trium priorum segmentorum utrinque levius incurvus, ceterorum in medio leviter incurvus.

Caudæ segmenta epimeris medioeribus; epimera segmenti 5. valde divergentia.

Telsum vix latius quam longius, in medio longe et profundius coarctatum; apex et basis fere æque longa: margo posterior levissime curvatus, angulis externis rotundatis.

Uropodum scapus multo longior quam latior, post late rotundatus, angulus interior acutior; apex a basi angulo rotundate obtuso minus manifesto discretus. Exopoditum mediocre, satis longe ab apice scapi desinens. Endopoditum mediocre, procul a margine posteriore telsi desinens.

Color fuscus, maculis flavis in series per longitudinem positis.

Long. 7 m. m. Lat. 3,5 m. m.

Patria: Siam. (Dr. Th. Mortensen in Mus. Kjobenhavn).

Remarks. This species has some affinities to the species of section VI.

bb. Uropodum exopoditum longum, endopoditum mediocre. Species 80—88.

c. Telsum in medio leviter coarctatum. Species 80—82.

80. *Armadillo pretoriensis*.

(Tab. X fig. 34).

Armadillo pretoriensis Dollf. Mém. soc. zool. Fr. VIII. 348.

Patria: South Africa: at Vryburg in Betchouanaland and at Pretoria in Transvaal. (Eug. Simon in Mus. Dollfus).

81. *Armadillo mucidus*.

Armadillo mucidus B.-L. Crust. Is. Terr. 32.

Patria: Cape-Town. (Mus. St. Petersburg).

82. *Armadillo panurus*.

Oculi majores: ocelli dense congregati, numero c. 20.
Antennæ?

Epistoma margine superiore mediæ fronti subadpresso et ad latera frontem paulum superante. Clypeus lobis minoribus, subtriangulis. Vertex lævis.

Trunci segmenti 1. epimera infra plica parva, obtusa, angulis prioribus acutioribus, posterioribus rotundate obtusis. Segmenti 2. epimera infra plica minutissima, vix conspicua. Margo posterior segmentorum trium priorum utrinque leviter incurvus.

Caudæ segmenta epimeris longioribus; epimera segmenti 5. paulum divergentia.

Telsum vix latius quam longius, in medio leviter coarctatum; apex et basis subæque longa, margine posteriore leviter curvato, angulis externis rotundatis.

Uropodum scapus nonnihil longior quam latior, post rotundate obtusus; apex a basi angulo incurvo manifesto discretus; apex basi multo brevior. Exopoditum satis longum, apicem scapi tamen non attingens. Endopoditum longius, marginem posteriorem telsi fere attingens.

Pæne unicolor, flavus.

Long. 7 m. m. Lat. 3,3 m. m.

Patria: Natal. One specimen taken by Mr. Wahlberg (Mus. Stockholm).

cc. Telsum in medio non coarctatum. Species 83—88.

83. *Armadillo nigrinus*.

(Tab. X fig. 35—36).

Armadillo nigrinus B.-L. Crust. Is. Terr. 37.

Patria: Cape-Town, Port Elisabeth.

84. *Armadillo stricticauda*.

(Tab. X fig. 37—38).

Armadillo stricticauda Dollf. Mém. soc. zool. Fr. VIII. 348.

Patria: At Makapan in Transvaal in caves (E. Simon in Mus. Dollfus).

85. *Armadillo simplex*.*Armadillo simplex* Dollf. Mém. soc. zool. Fr. VIII. 180.

Patria: Madagascar (Mus. Paris).

86. *Armadillo carinatus*.

Patria: Madagascar. (Mus. Dollfus).

Remarks. This species will be described in an other paper on the Isopod-fauna from Madagascar, conf. p. 49.

Here I think can be placed two species unknown to me, described by Mr. Adr. Dollfus:

87. *Armadillo tenuipunctatus*.*Armadillo tenuipunctatus* Dollf. Proc. zool. soc. London. 1896. 389.

Patria: Island St. Vincent. (Mus. London).

88. *Armadillo depressus*.*Armadillo depressus* Dollf. Proc. zool. soc. London. 1896. 390.

Patria: Island St. Vincent. (Mus. London).

aa. *Epistoma* margine superiore frontem valde superans. Species 89—90.89. *Armadillo luteus*.

Patria: Madagascar. (Mus. Hamburg).

Remarks. This species will be described in a paper on the Isopods from Madagascar, conf. p. 49.

90. *Armadillo latifrons*.

(Tab. X fig. 39—44).

Oblonge ovalis, convexus, in trunci segmentis utrinque

obtuse tuberculatus, in epimeris segmentorum trunci 2.-7. et segmenti 3. caudæ linea oblique transversa, elevata.

Oculi magni, ocelli in series quatuor regulariter positi, numero c. 20., ægre pigmentati.

Antennæ graciles, tertia corporis parte paulo longiores. Scapi articulus 4. longior quam articulus 2.; articulus 5. tenuis, longissimus, articulis 3. et 4. conjunctis subæqualis. Flagellum dimidio articuli 5. scapi vix longius: articulus prior altero fere triplo brevior.

Epistoma margine superiore reflexo frontem valde superante; frons post marginem epistomatis sulco transverso, profundo excavata. Linea marginalis verticalis post crassa, utrinque ad epistomatis marginem descendentem producta. Clypeus planiusculus vel leviter fornicatus, lobis lateralibus majoribus, anguste subtriangulis.

Trunci segmentum 1. epimeris subtenuibus leviter revolutis, margine curvato, post subito introducto, ut anguli posteriores desecti videantur; ipsi anguli posteriores acute recti; epimerum infra plica subacuta. Segmentum 2. epimeris subfissis: lacinia interior medioeris, obtusa. Margo posterior segmentorum 1.-6. utrinque profundius incurvus. Segmenta 5.-6.-7. infra in epimeris duplicatura anteriore prædita.

Caudæ segmenta 3.-4.-5. epimeris paulum oblique rectangularibus, infra processu inflexo, parvo; epimera segmenti 5. paulum divergentia, telso non breviora. Pleopodum tracheæ magnæ, maxime primi paris; areæ operculares primi paris in femina perparvæ, in medio inter se multum distantes.

Telsum paulo latius quam longius, in medio coarctatum; apex paulo longior quam basis, post subtransversus.

Uropodum scapus nonnihil longior quam latior, ad apicem angustatus; latus exterius subrectum, latus interius leviter incurvum. Exopoditum mediocre, stiliforme, apicem scapi fere attingens; endopoditum tenue, mediocre, telso nonnihil brevius.

Unicolor, albidus.

Long. 15 m. m. Lat. 7 m. m.

Patria: South Africa. In Caffraria and in Natal at Port Natal Mr. A. Wahlberg has collected several specimens of this species in the years 1840—45. (Mus. Stockholm).

EXPLICATIO FIGURARUM.

Tabula VI.

Fig. 1—4. *Pseudophiloscia inflexa* B.-L.

1. Apex mandibulae sinistrae, pronus. $50/1$.
2. Apex laciniae exterioris maxillae prioris paris. $150/1$.
3. Apex laciniae interioris maxillae ejusdem paris. $150/1$.
4. Uropus dexter, pronus. $25/1$.

Fig. 5—6. *Pseudophiloscia fragilis* B.-L.

5. Antennula dextra. $70/1$.
6. Uropus dexter, pronus. $25/1$.

Fig. 7—17. *Arhina porcellioides* B.-L.

7. Antenna dextra. $12/1$.
8. Antennula dextra. $150/1$.
9. Lacinia interior maxillae prioris paris. $25/1$.
10. Apex ejusdem laciniae. $70/1$.
11. Pars apicalis maxillipedis sinistri, supina. $70/1$.
12. Caudae segmentum quintum cum telso et uropodibus, pronum. $12/1$.
13. Uropus sinister, pronus. $25/1$.
14. Uropus sinister, supinus. $25/1$.
15. Pleopus sinister primi paris, pronus. ♂. $25/1$.
16. id. secundi paris, » . » $25/1$.
17. id. quinti paris, » . » $25/1$.

Fig. 18—23. *Suarezia heterodoxa* Dollf.

18. Antenna dextra. $25/1$.
19. Apex laciniae exterioris maxillae prioris paris. $70/1$.

20. Apex laciniae interioris maxillae ejusdem paris. $70/1$.
21. Pars apicalis maxillipedis dextri, supina. $70/1$.
22. Segmentum quintum caudae cum telso et uropodibus, pronum. $12/1$.
23. Uropus sinister, pronus. $25/1$.

Fig. 24—29. Saïdjahus creper B.-L.

24. Antenna sinistra. $12/1$.
25. Caput, pars anterior. $8/1$.
26. Apex laciniae exterioris maxillae prioris paris. $70/1$.
27. Apex laciniae interioris maxillae ejusdem paris. $70/1$.
28. Pars apicalis maxillipedis dextri, supina. $70/1$.
29. Segmentum quintum caudae cum telso et uropodibus, pronum. $12/1$.

Fig. 30. Ambounia Suarezzi Dollf.

30. Segmentum quintum caudae cum telso et uropodibus, pronum. e. $10/1$.

Tabula VII.

Fig. 1—10. Scleropactes concinnus B.-L.

1. Caput, pronum. $20/1$.
2. Antenna dextra. $15/1$.
3. Apex laciniae interioris maxillae prioris paris. $100/1$.
4. Pars apicalis maxillipedis sinistri, supina. $50/1$.
5. Pleopus sinister primi paris, supinus. ♂. $20/1$.
6. id., pronus. $20/1$.
7. id., supinus. ♀. $20/1$.
8. Pleopus sinister secundi paris, supinus. ♂. $20/1$.
9. Segmentum quintum caudae cum telso et uropodibus, pronum. ♂. $20/1$.
10. Uropodes, supini. ♂. $20/1$.

Fig. 11—15. Spherillo erinaceus B.-L.

11. Antennula sinistra. $70/1$.
12. Apex laciniae interioris maxillae prioris paris. $70/1$.

13. Pars apicalis maxillipedis sinistri, supina. $70/1$.
14. Uropus dexter, pronus. $25/1$.
15. Uropus dexter, supinus. $25/1$.

Fig. 16—17. Spherillo sollers B.-L.

16. Uropus sinister, pronus. $12/1$.
17. Endopoditum uropodis sinistri, a latere sinistro exhibitum. $25/1$.

Fig. 18—21. Spherillo Macmahoni Chilt.

18. Antenna dextra. $25/1$.
19. Antennula dextra. $130/1$.
20. Uropus dexter, pronus. $40/1$.
21. Uropus dexter, supinus. $25/1$.

Fig. 22—26. Spherillo hawaiiensis Dana.

22. Antenna sinistra. $8/1$.
23. Apex laciniae interioris maxillae prioris paris. $130/1$.
24. Pars apicalis maxillipedis sinistri, supina. $70/1$.
25. Telsum cum uropodibus, pronum. $12/1$.
26. Uropus sinister, pronus. $15/1$.

Fig. 27—33. Spherillo grossus B.-L.

27. Antennula sinistra. $50/1$.
28. Caput, pronum. $8/1$.
29. Apex laciniae exterioris maxillae prioris paris. $70/1$.
30. Apex laciniae interioris ejusd. $70/1$.
31. Uropus sinister pronus. $8/1$.
32. Uropus dexter, pars anterior. $25/1$.
33. Endopoditum uropodis sinistri, a latere sinistro exhibitum. $25/1$.

Fig. 34—36. Spherillo rufomarginatus B.-L.

34. Antennula dextra. $70/1$.
35. Apex laciniae interioris maxillae prioris paris. $90/1$.
36. Pleopus dexter primi paris, supinus. ♀. $25/1$.

Fig. 37—39. *Spherillo rugulosus* Miers.

37. Pleopus dexter primi paris, supinus. ♂. $50/1$.
 38. id. ♀. $50/1$.
 39. Uropus dexter, pronus. $25/1$.

Tabula VIII.Fig. 1—8. *Spherillo bifrons* B.-L.

1. Antennula sinistra. $130/1$.
 2. Antenna sinistra. $12/1$.
 3. Apex laciniae interioris maxillae prioris paris. $130/1$.
 4. Latus dextrum segmenti primi trunci, supinum. $12/1$.
 5. Cauda, prona. $12/1$.
 6. Pleopus sinister primi paris, pronus. $25/1$.
 7. Uropus dexter, pronus. $25/1$.
 8. Uropus dexter, supinus. $25/1$.

Fig. 9. *Spherillo tarangensis* B.-L.

9. Uropus dexter, pronus. $25/1$.

Fig. 10. *Spherillo dispersus* B.-L.

10. Caput, pronum. $12/1$.

Fig. 11—12. *Spherillo rugosus* B.-L.

11. Apex laciniae interioris maxillae prioris paris. $70/1$.
 12. Uropus dexter, pronus. $25/1$.

Fig. 13—14. *Spherillo iniquus* B.-L.

13. Mandibula sinistra, prona. $50/1$.
 14. Mandibula dextra, apex. $50/1$.

Fig. 15—22. *Spherillo translucidus* B.-L.

15. Caput, a latere sinistro exhibitum. $15/1$.
 16. Pars anterior capitis. $8/1$.
 17. Caput pronum. $12/1$.
 18. Antennula. $90/1$.

19. Antenna dextra. $^{12}/_1$.
20. Apex laciniae interioris maxillae prioris paris. $^{90}/_1$.
21. Latus sinistrum trunci segmenti primi et secundi, supinum. $^8/_1$.
22. Uropus sinister, pronus. $^{15}/_1$.

Fig. 23—35. *Spherillo bicoloratus* B.-L.

23. Caput, pronum. $^8/_1$.
24. Caput, a latere sinistro exhibitum. $^8/_1$.
25. Antennula. $^{70}/_1$.
26. Antenna dextra. $^{15}/_1$.
27. Apex laciniae interioris maxillae prioris paris. $^{70}/_1$.
28. Trunci segmentum primum, pronum. $^5/_1$.
29. Latus sinistrum segmenti primi trunci, supinum. $^5/_1$.
30. Latus sinistrum segmenti secundi trunci, supinum. $^5/_1$.
31. Pes sinister primi paris. $^{12}/_1$.
32. Segmentum quintum caudae cum telso et uropodibus. $^5/_1$.
33. Uropus sinister, pronus. $^8/_1$.
34. Uropus sinister, supinus. $^8/_1$.
35. Uropus dexter, pars anterior. $^{25}/_1$.

Fig. 36. *Spherillo nicobaricus* B.-L.

36. Pars anterior capitis. $^{15}/_1$.

37—39. *Spherillo lentus* B.-L.

37. Uropus sinister, pronus. $^{15}/_1$.
38. Exopoditum uropodis sinistri. $^{35}/_1$.
39. Endopoditum uropodis sinistri a latere sinistro exhibitum. $^{35}/_1$.

Fig. 40—42. *Spherillo montivagus* B.-L.

40. Antenna dextra. $^{13}/_1$.
41. Apex laciniae interioris maxillae prioris paris. $^{70}/_1$.
42. Uropus sinister, pronus. $^{12}/_1$.

Tabula IX.

Fig. 1—2. *Spherillo nobilis* B.-L.

1. Apex laciniae interioris maxillae prioris paris. $^{130}/_1$.
2. Uropus dexter, pronus. $^{25}/_1$.

Fig. 3. *Spherillo obscurus* B.-L.

3. Segmentum quintum caudae cum telso et uropodibus. $^{12}/_1$.

Fig. 4—7. *Spherillo ingens* B.-L.

4. Mandibula dextra, supina. $^{25}/_1$.
5. Mandibula sinistra, supina. $^{25}/_1$.
6. Mandibula sinistra, apex. $^{25}/_1$.
7. Segmentum quintum caudae cum telso et uropodibus. $^5/_1$.

Fig. 8—16. *Armadillo officinalis* Dum.

8. Caput, a latere sinistro exhibitum. $^7/_1$.
an. Tubercula antennaria.
ar. Area infraocularis.
9. Mandibula sinistra, supina. $^{25}/_1$.
10. Apex laciniae interioris maxillae prioris paris. $^{70}/_1$.
11. Segmenta tria priora trunci, supina, a latere dextro exhibitum. $^7/_1$.
12. Latus dextrum segmenti secundi trunci, supinum. $^7/_1$.
13. Uropus sinister, pronus. $^8/_1$.
14. id. , supinus. $^8/_1$.
15. Uropus dexter, pars anterior. $^{25}/_1$.
16. Endopoditum uropodis dextri, a latere dextro exhibitum. $^{35}/_1$.

Fig. 17—20. *Armadillo cinctus* B.-L.

17. Caput, pronum. $^8/_1$.
18. Caput, pars anterior. $^8/_1$.
19. Caput, a latere sinistro exhibitum. $^8/_1$.
20. Antenna dextra. $^{13}/_1$.

Fig. 21. *Armadillo albomarginatus* Dollf.

21. Uropus dexter, pronus. $\frac{25}{1}$.

Fig. 22. *Armadillo Ausselii* Dollf.

22. Uropus dexter, pronus. $\frac{70}{1}$.

Fig. 23—24. *Armadillo canariensis* Dollf.

23. Uropus sinister, pronus. $\frac{25}{1}$.
 24. Endopoditum uropodis sinistri, a latere sinistro exhibitum. $\frac{50}{1}$.

Fig. 25—29. *Armadillo clausus* B.-L.

25. Apex laciniae interioris maxillae prioris paris. $\frac{100}{1}$.
 26. Uropus sinister, pronus. $\frac{8}{1}$.
 27. id. , supinus. $\frac{8}{1}$.
 28. Endopoditum uropodis sinistri, partim a latere dextro exhibitum. $\frac{35}{1}$.
 29. Uropus dexter, pars anterior. $\frac{25}{1}$.

Fig. 30—31. *Armadillo venustus* B.-L.

30. Uropus sinister, pronus. $\frac{25}{1}$.
 31. Endopoditum uropodis sinistri, a latere dextro exhibitum. $\frac{70}{1}$.

Fig. 32—33. *Armadillo glomus* B.-L.

32. Segmenta duo priora trunci, supina, a latere sinistro exhibita. $\frac{8}{1}$.
 33. Latus dextrum segmenti secundi trunci, supinum. $\frac{8}{1}$.

Fig. 34. *Armadillo truncorum* B.-L.

34. Endopoditum uropodis dextri, supinum. $\frac{70}{1}$.

Fig. 35—37. *Armadillo echinatus* Br.

35. Animal pronus. $\frac{5}{1}$.

36. Uropus dexter, pronus. $\frac{25}{1}$.
 37. id. , supinus. $\frac{25}{1}$.

Fig. 38. *Armadillo hirsutus* Koch.

38. Uropus sinister, pronus. $\frac{10}{1}$.

Fig. 39. *Armadillo oraniensis* Dollf.

39. Uropus sinister, pronus. $\frac{15}{1}$.

Fig. 40—41. *Armadillo festivus* B.-L.

40. Apex laciniae interioris maxillae prioris paris. $\frac{130}{1}$.
 41. Uropus dexter, pronus. $\frac{25}{1}$.

Fig. 42. *Armadillo nigricans* B.-L.

42. Apex laciniae interioris maxillae prioris paris. $\frac{130}{1}$.

Tabula X.

Fig. 1—4. *Armadillo tuberosus* B.-L.

1. Animal, a latere sinistro exhibitum. $\frac{12}{1}$.
2. Antenna dextra. $\frac{25}{1}$.
3. Latus sinistrum segmentorum duorum priorum, supinum. $\frac{25}{1}$.
4. Segmentum quintum caudae cum telso et uropodibus. $\frac{25}{1}$.

Fig. 5. *Armadillo flavescens* Br.

5. Segmentum quintum caudae cum telso et uropodibus. $\frac{10}{1}$.

Fig. 6—9. *Armadillo microps* B.-L.

6. Antenna sinistra. $\frac{25}{1}$.
7. Caput, anterior pars. $\frac{8}{1}$.
8. Mandibula sinistra; apex. $\frac{70}{1}$.
9. Apex laciniae interioris maxillae prioris paris. $\frac{135}{1}$.

Fig. 10—13. *Armadillo aculeatus* B.-L.

10. Caput, a latere sinistro exhibitum. $\frac{12}{1}$.

11. Apex laciniae interioris maxillae prioris paris. $^{130}/_1$.
12. Segmentum quintum caudae cum telso et uropodibus. $^{13}/_1$.
13. Uropus dexter, pronus. $^{25}/_1$.

Fig. 14—18. *Armadillo marcidus* B.-L.

14. Antenna dextra. $^{12}/_1$.
15. Caput, pars anterior. $^8/_1$.
16. Caput, pronum. $^8/_1$.
17. Apex laciniae interioris maxillae prioris paris. $^{70}/_1$.
18. Uropus dexter, pronus. $^{25}/_1$.

Fig. 19. *Armadillo galeatus* B.-L.

19. Uropus dexter, pronus. $^{35}/_1$.

Fig. 20—22. *Armadillo murinus* Br.

20. Mandibula dextra. $^{50}/_1$.
21. Mandibula sinistra. $^{50}/_1$.
22. Apex laciniae interioris maxillae prioris paris. $^{70}/_1$.

Fig. 23. *Armadillo proximatus* B.-L.

23. Apex laciniae interioris maxillae prioris paris. $^{70}/_1$.

Fig. 24. *Armadillo immotus* B.-L.

24. Uropus sinister, pronus. $^{12}/_1$.

Fig. 25—27. *Armadillo collinus* B.-L.

25. Apex laciniae interioris maxillae prioris paris. $^{70}/_1$.
26. Segmentum quintum caudae cum telso et uropodibus. $^7/_1$.
27. Endopoditum uropodis sinistri, a latere sinistro exhibitum. $^{25}/_1$.

Fig. 28—32. *Armadillo intermixtus* B.-L.

28. Antennula dextra. $^{70}/_1$.
29. Apex corneus laciniae mobilis mandibulae sinistrae. $^{70}/_1$.
30. Apex laciniae interioris maxillae prioris paris. $^{130}/_1$.

31. Uropus sinister, pronus. $\frac{25}{1}$.
 32. Uropus sinister, supinus. $\frac{25}{1}$.

Fig. 33. Armadillo limbatus. Br.

33. Segmentum quintum caudæ cum telso et uropodibus. $\frac{10}{1}$.

Fig. 34. Armadillo pretoriensis Dollf.

34. Uropus sinister, pronus. $\frac{12}{1}$.

Fig. 35—36. Armadillo nigrinus B.-L.

35. Apex laciniae interioris maxillae prioris paris. $\frac{100}{1}$.
 36. Telsum cum uropodibus. $\frac{10}{1}$.

37—38. Armadillo stricticauda Dollf.

37. Pleopus sinister primi paris maris, supinus. $\frac{25}{1}$.
 38. Uropus sinister, pronus $\frac{15}{1}$.

Fig. 39—44. Armadillo latifrons B.-L.

39. Antenna sinistra. $\frac{12}{1}$.
 40. Antennula dextra. $\frac{70}{1}$.
 41. Pleopus dexter primi paris maris, supinus. $\frac{25}{1}$.
 42. » » » » feminae, » . $\frac{25}{1}$.
 43. Uropus dexter, pronus. $\frac{12}{1}$.
 44. » » , supinus. $\frac{12}{1}$.
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